

SEQUENCE LISTING

<110> Steer, Brian
Callen, Walter
Healey, Shaun
Hazlewood, Geoff
Wu, Di
Blum, David
Esteghlalian, Alireza

<120> XYLANASES, NUCLEIC ACIDS ENCODING THEM AND METHODS FOR MAKING AND USING THEM

<130> 09010-290001 and 09010-290W01

<140> not assigned

<141> 2003-06-16

<150> US 60/389,299

<151> 2002-06-14

<160> 380

<170> FastSEQ for Windows Version 4.0

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<211> 1128

<212> DNA

<213> Bacteria

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cgcctgctgt	gggacacccc	gatccgcacc	ggcacgcgcg	gctactacga	caacttcctc	1080
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<211> 375

<212> PRT

<213> Bacteria

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Ser	Tyr	Ala	Met	Met	Ile	Ala	Val	Gln	Tyr	Gly	Arg	Lys	Asp	Val	Phe
65					70				75					80	
Asp	Lys	Leu	Trp	Gly	Trp	Val	Met	Lys	Tyr	Met	Phe	Met	Thr	Glu	Gly

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Leu	His	Gln	Gly	85	Tyr	Phe	Ala	Trp	Ser	90	Val	Asp	Pro	Ser	Gly	95	Val	Pro
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Leu	Phe	Leu	115	Ala	Ser	Ala	Arg	Trp	120	Gly	Asp	Gly	Glu	Gly	125	Val	Tyr	Glu
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His	Phe	Tyr	180	Glu	Val	Phe	185	Ala	Arg	190	Ala	Asp	Glu	Ala	Asp	195	Arg	Pro
Phe	Trp	195	Ala	Gln	Ala	Ala	200	Lys	Ala	205	Ser	Arg	Glu	Tyr	Leu	Val	Thr	Ala
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Val	Pro	Glu	255	Leu	Cys	Asp	260	Ala	Asn	265	Ala	Arg	Leu	Gln	Arg	Phe	Phe	Leu
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305	Ser	Leu	Ala	Ala	Met	His	310	Ser	Gln	315	Glu	Pro	Asp	Ala	Leu	Asp	Asn	Ala
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Arg	Arg	Tyr	335	Tyr	Asp	Asn	340	Phe	Leu	345	Tyr	Ala	Phe	Ala	Phe	350	Leu	Ala
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<220>
 <223> Obtained from an environmental sample

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<213> Unknown

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<223> obtained from an environmental sample

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Met	Asp	Lys	Gly	Pro	Ala	Pro	Asp	Gly	Glu	Glu	Tyr	Phe	Ile	Thr	Ala
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Leu	Leu	Phe	Ala	His	Ala	Arg	Trp	Gly	Ser	Ala	Ser	Gly	Thr	Thr	Asn
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Arg	Arg	Lys	Pro	Gly	Asn	Gly	Asp	Pro	Tyr	Gly	Glu	Pro	Ser	Met	Phe
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Thr	Phe	Thr	Asp	Pro	Ser	Tyr	His	Leu	Pro	Ala	Phe	Tyr	Asp	Val	Trp
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Ala	Leu	Glu	Leu	Gln	Ala	Asp	Tyr	Asp	Asn	Ser	Lys	Leu	Tyr	Gly	Ile
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Trp	Ala	Asp	Lys	Ala	Asp	Leu	Lys	Lys	Asp	Ile	Asp	Tyr	Phe	Lys	Gln
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Ser	Tyr	Gly	Asn	Arg	Trp	Thr	Leu	Asp	Gly	Thr	Gln	Arg	Gly	Ala	Asp
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His	Ser	Pro	Gly	Leu	Val	Gly	Cys	Asn	Ala	Val	Ala	Ser	Leu	Ala	Ala
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 Ser Met Leu His Leu Ser Gly Asn Phe Lys Ala Tyr Leu Ser Thr Asn
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 Thr Thr Pro Ala Asn Ser Ser Ser Ile Thr Pro Thr Thr Ala Ser Phe
 405 410 415
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 Ser Gly Thr Asp Tyr Ser Val Ser Gly Thr Lys Tyr Thr Ile Lys Lys
 450 455 460
 Glu Tyr Leu Ala Lys Gln Pro Val Gly Thr Thr Lys Leu Ala Phe Asn
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 Phe Ser Ala Gly Gly Thr Pro Glu Leu Thr Val Thr Ile Thr Asp Thr
 485 490 495
 Gly Ser Ser Ser Ile Ser Pro Thr Thr Ala Thr Phe Asp Lys Lys Thr
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 Gly Ala Gln Ala Asp Ile Ala Val Thr Met Thr Leu Asn Gly Asn Thr
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 Tyr Ser Thr Ser Gly Ser Thr Val Thr Ile Lys Lys Glu Tyr Leu Ala
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 Lys Gln Ala Asn Gly Thr Val Thr Leu Thr Phe Thr Phe Ser Ala Gly
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 Ala Ala Gln Thr Ile Asp Ile Thr Val Lys Asp Thr Thr Gly Gly Ala
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 Ala Gly Ile Lys Tyr Asn Phe Ala Thr Asp Asn Leu Pro Asn Gly Tyr
 600 605
 Pro Lys Tyr Ser Ser Ser Asp Ile Ser Ala Thr Ile Thr Gly Gly Ala
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 Pro Phe Ser Val Thr Gly Asn Leu Ser Gly Tyr Thr Gly Ile Lys Ile
 645 650 655
 Asn Val Lys Gly Val Ser Gly Asp Phe Thr Tyr Lys Val Leu Asn Ala
 660 665 670
 Ala Ile Gly Ser Thr Asn Leu Gly Ser Val Asn Asn Ala Pro Ile Pro
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<223> obtained from an environmental sample

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<213> Unknown

<220>

<223> obtained from an environmental sample

<221> SIGNAL

<222> (1)...(47)

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Glu	Ser	Gly	Glu	Tyr	Arg	Asn	Leu	Phe	Ala	Glu	Ala	Leu	Gly	Lys	Ser
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65					70				75						80
Tyr	Gly	Asp	Asp	Val	Ser	Glu	Arg	Val	Tyr	Tyr	Pro	Val	Gly	Ser	Asp
			85					90						95	
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Met	Ser	Tyr	Gly	Met	Met	Ile	Ala	Val	Gln	Met	Asn	Lys	Lys	Glu	Glu
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Phe	Asp	Arg	Ile	Trp	Lys	Trp	Thr	Lys	Thr	Tyr	Met	Tyr	Gln	Thr	Glu
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Gln	Leu	Ala	Ala	Asn	Pro	Ala	Ser	Asp	Gly	Glu	Val	Trp	Phe	Val	Met
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Ala	Leu	Phe	Phe	Ala	Asp	Ala	Arg	Trp	Gly	Ser	Gly	Glu	Gly	Ile	Tyr
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		195					200					205			
Lys	Glu	Leu	Gly	Gly	Asn	Leu	Ala	Thr	Asn	Leu	Phe	Asp	Pro	Glu	Thr
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225					230					235					240
Asp	Ala	Ser	Tyr	His	Met	Pro	His	Phe	Tyr	Glu	Leu	Trp	Ala	Arg	Trp
			245						250					255	
Ala	Asp	Lys	Asn	Asn	Asp	Phe	Trp	Ala	Glu	Ala	Ala	Thr	Val	Ser	Arg

260 265 270
 Glu Phe Leu Pro Thr Ala Val His Pro Glu Thr Gly Leu Ala Pro Asn
 Tyr Ser 275 Phe Asp Gly Arg 280 Tyr Asn Asp Glu 285 Tyr His Gly Gln
 Phe Arg Tyr Asp Ala Phe Arg Val Gly Ala Asn Ile Gly Met Asp Tyr
 305 Val Trp Phe His Pro 310 Ser Glu Trp Tyr Arg 315 Glu Gln Ala Asn Arg Gln
 Leu Ser Phe Phe Ala Ser Gln Gly Ile Asp Asp Tyr Val Ala Glu Tyr
 Ser Leu Asp 340 Gly Lys Pro Leu Ala 345 Gly His Arg Ala Thr Gly Leu Ile
 Ala Thr Asn Ala Val Leu Ala Tyr Ala Ala Asp Pro Glu Ile Gly Gln
 Pro Phe Val Gln Ala Leu Trp Asp Ala Glu Pro Pro Thr Gly Arg Tyr
 385 Arg Tyr Tyr Asp Gly 405 Leu Leu Tyr Met Met 410 Gly Leu Leu Gln Ala Ser
 Gly Asn Phe Arg Ile Tyr Glu Pro Gly Ile Thr Pro Arg Ala Glu Leu
 Pro Pro Pro 435 Pro Pro Arg Ala Ile 440 Glu Gly Arg Phe Ala Pro Ile Thr
 Gly Arg Ala Leu Leu Leu Ile 455 Gly Pro Asn Ala Asp Gly Val Asn Ala
 Tyr Phe Asp Lys Leu Val Thr Ala Pro Gly Gly Val Asn Val Glu Leu
 465 Ser Leu Lys Ser Pro Asp Leu Glu Ala Leu Asp Ala Leu Ala Arg Lys
 Tyr Pro Asn Ser Thr Leu Ser Val Gly 505 Leu Ser Leu Asp Gly Pro Val
 Thr Glu Ala Asp Ala Arg Val Gly 520 Glu Leu Leu Asp Ala Leu Ala Val
 Tyr Pro Arg Pro Val Phe Leu 535 Arg Ile Gly Pro Glu Phe Asp Leu Ala
 Ala Ser Gly Gln Gly Pro 550 Glu Tyr Val Ala Ala Trp Lys Thr Leu
 545 His Asn Glu Ile Gln Ala Arg Gly Ser Ser 570 Asn Ile Ala Leu Val Trp
 His Ser Ala Ala Cys Glu Ser Pro 585 Phe Gly Gly His Pro 590 Leu Glu
 Ala Trp Tyr Pro Gly Asp Glu Phe Val Asp Trp Val Ala Val Ser Arg
 Thr Ala Gln Ser Ala Asp Cys 615 Glu Gly Gln Ser Val Glu Ala Val Leu
 Gln Phe Ala Arg Glu Arg Tyr Lys Pro Val Val Leu Val Ala Ser Pro
 625 Ala Glu Asp Ile Phe 630 Glu Phe Val Tyr Ala Asn Asn Asp Val Ile Arg
 Ala Leu Leu Tyr 645 Leu Asn Thr Glu Pro Gly Leu Phe Asp Thr Pro Glu
 Phe Leu Ser Gly Trp Lys Ala Glu 665 Ile Gly Gln Gln Phe Trp Leu Arg
 Gly Gly 675 Pro Ala Leu Phe Ser 680 Thr Leu Gly Leu Asp Glu
 690 695 700

<210> 7

<211> 1539

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample

<400> 7

atggcaggtt	taatcaccta	ttgcttgatc	ggcgtcttac	tcgtgatgcc	agtccttgcc	60
gcttgacaga	cagcacctac	gccaacgctg	atgagccagc	caacttccac	gccgcaaccg	120
gccctgcaac	cgacgccacc	accgacgagc	gtccccgggt	cgatcggggc	gtttgagtc	180
ggtcagtatc	gtaatctctt	cacggaatta	ctgggcaaga	gcgaggccga	gattcagcag	240

aagatcgc	atc	aggcgtgg	gcagttgt	tacggcgaca	acgacacgca	gcgcgtttac	300
tatcccgt	g	gtcgcgac	ggcctacat	aaagacatcg	gcaacaatga	tgtgcgcag	360
gagggat	gt	cgtacgg	gatgctgg	gtgcagctgg	acaagcagga	agagttcaac	420
aaattgt	gga	agtggg	cacctata	ctgcaaaagg	atggcccgt	caaaggctat	480
tttgcgt	ggc	atgccaat	gaacggtg	cagctggatg	cggttccgc	ctccgatggc	540
gaagagt	ggt	ttgtcatg	actgctct	gcggcaa	atc	gctggggcaa	600
atcttta	aatt	atcaggcc	gagcaga	atcctggatg	tgatgctg	taagagcg	660
gaggaca	acg	gtctcgcc	cagcatgt	gatccggaca	cgaagcagg	ggtgtttgt	720
ccggccg	ggg	gccaggcc	attcaccg	ccgtcttat	acttgccc	gttctatga	780
ctgtggg	cgc	gctgggct	caaggata	gatttttga	aagaagcgg	gcaggccag	840
cgcgaatt	ttt	ggaagaag	ggcgcatc	gaaacggg	tgatgtct	ctacgccag	900
tttgacg	gga	gacccagg	cgattctga	cacaaggat	ttcgctat	gcggttccg	960
gtggcg	tcca	atgtggcg	cgattggg	tggttcgcc	ccgatccgt	ggaggtgga	1020
cagagca	atc	ggttgttg	tttcttcc	tcacaagg	tgataagta	tccgagtct	1080
tacaacat	cgc	atggcacg	gttatcca	aatcgctc	cggtttgat	cgccatga	1140
gccacag	ctg	gactcgcg	tgatccgg	aagagcaag	actttgtg	ggcgctatg	1200
gatctgga	aaa	ttcccagcg	acaatggcg	tattacgat	gggtgctg	tttcttgg	1260
ctgtttg	caag	ccagcgga	ctatcgcat	tacacggcg	atatgccc	ggtggtgcg	1320
cccacac	ccta	cgcccgat	gatcacgca	gcgaaatt	cacccggcg	tgacgcggt	1380
ctgttcag	tgc	tggaacaga	tgcactcg	gaatatgt	cggcgacgg	ctttgagcc	1440
ggcggcg	tga	tgttgaac	tactttgg	agcgctct	ttgacgcac	actgcctga	1500
agcgctct	g	tgatcggat	ggacgtcag	gatcaata			1539

<210> 8

<211> 512

<212> PRT

<213> Unknown

<220>

<223> obtained from an environmental sample

<221> SIGNAL

<222> (1)...(57)

<400> 8

Met	Ala	Arg	Leu	Ile	Thr	Tyr	Cys	Leu	Ile	Gly	Val	Leu	Leu	Val	Met
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Pro	Val	Leu	Ala	Ala	Cys	Ser	Thr	Ala	Pro	Thr	Pro	Thr	Leu	Met	Ser
			20					25					30		
Gln	Pro	Thr	Ser	Thr	Pro	Gln	Pro	Ala	Leu	Gln	Pro	Thr	Pro	Pro	Pro
		35					40					45			
Thr	Ser	Val	Pro	Arg	Ser	Ile	Gly	Ala	Phe	Glu	Ser	Gly	Gln	Tyr	Arg
		50				55					60				
Asn	Leu	Phe	Thr	Glu	Leu	Gly	Lys	Ser	Glu	Ala	Glu	Ile	Gln	Gln	
65					70				75					80	
Lys	Ile	Asp	Gln	Ala	Trp	Ala	Gln	Leu	Phe	Tyr	Gly	Asp	Asn	Asp	Thr
				85					90					95	
Gln	Arg	Val	Tyr	Tyr	Pro	Val	Gly	Arg	Asp	Arg	Ala	Tyr	Ile	Lys	Asp
			100					105					110		
Ile	Gly	Asn	Asn	Asp	Val	Arg	Ser	Glu	Gly	Met	Ser	Tyr	Gly	Met	Met
		115					120					125			
Leu	Ala	Val	Gln	Leu	Asp	Lys	Gln	Glu	Glu	Phe	Asn	Lys	Leu	Trp	Lys
		130				135						140			
Trp	Ala	His	Thr	Tyr	Met	Leu	Gln	Lys	Asp	Gly	Pro	Tyr	Lys	Gly	Tyr
145					150					155					160
Phe	Ala	Trp	His	Ala	Asn	Glu	Asn	Gly	Glu	Gln	Leu	Asp	Ala	Gly	Pro
				165					170					175	
Ala	Ser	Asp	Gly	Glu	Glu	Trp	Phe	Val	Met	Ala	Leu	Leu	Phe	Ala	Ala
			180					185					190		
Asn	Arg	Trp	Gly	Asn	Gly	Glu	Gly	Ile	Phe	Asn	Tyr	Gln	Ala	Glu	Ala
		195					200					205			
Gln	Lys	Ile	Leu	Asp	Val	Met	Leu	His	Lys	Ser	Glu	Glu	Asp	Asn	Gly
		210				215					220				
Leu	Ala	Thr	Ser	Met	Phe	Asp	Pro	Asp	Thr	Lys	Gln	Val	Val	Phe	Val
225					230					235					240
Pro	Ala	Gly	Arg	Gln	Ala	Thr	Phe	Thr	Asp	Pro	Ser	Tyr	His	Leu	Pro
				245					250					255	
Ala	Phe	Tyr	Glu	Leu	Trp	Ala	Arg	Trp	Ala	Asp	Lys	Asp	Asn	Asp	Phe
			260					265					270		

Trp Lys Glu Ala Ala Gln Ala Ser Arg Glu Phe Trp Lys Lys Ala Ala
 275 280 285
 His Pro Glu Thr Gly Leu Met Ser Asp Tyr Ala Glu Phe Asp Gly Arg
 290 295 300
 Pro Gln Ala Asp Ser Glu His Lys Asp Phe Arg Tyr Asp Ala Phe Arg
 305 310 315 320
 Val Ala Ser Asn Val Ala Leu Asp Trp Ala Trp Phe Ala Ala Asp Pro
 325 330 335
 Trp Glu Val Glu Gln Ser Asn Arg Leu Leu Asp Phe Phe Arg Ser Gln
 340 345 350
 Gly Met Asp Lys Tyr Pro Ser Leu Tyr Asn Ile Asp Gly Thr Pro Leu
 355 360 365
 Ser Thr Asn Arg Ser Pro Gly Leu Ile Ala Met Asn Ala Thr Ala Gly
 370 375 380
 Leu Ala Ala Asp Pro Glu Lys Ser Lys Asp Phe Val Gln Ala Leu Trp
 385 390 395 400
 Asp Leu Glu Ile Pro Ser Gly Gln Trp Arg Tyr Tyr Asp Gly Val Leu
 405 410 415
 Tyr Phe Leu Ala Leu Leu Gln Ala Ser Gly Asn Tyr Arg Ile Tyr Thr
 420 425 430
 Pro Asp Met Pro Lys Val Val Arg Pro Thr Pro Thr Pro Asp Pro Ile
 435 440 445
 Thr Gln Ala Lys Phe Ala Pro Gly Asp Asp Ala Val Leu Phe Ser Val
 450 455 460
 Glu Thr Asp Ala Leu Asp Glu Tyr Val Thr Ala Thr Gly Phe Glu Pro
 465 470 475 480
 Gly Gly Val Met Leu Asn Thr Thr Leu Asp Ser Ala Ser Phe Asp Ala
 485 490 495
 Pro Leu Pro Asp Ser Ala Leu Leu Ile Gly Leu Asp Val Ser Asp Gln
 500 505 510

<210> 9
 <211> 1311
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 9
 atgtttccac gtctttccacc aagccgcttc aggcaagtta ccttaacctt gctcacgctc 60
 ggccttgtgt cactgaccgg ttgtgcaggt aacagcaagc cggatgcaga caccagtact 120
 gctgggtgccg ttgctaccgg cgagtaccgc aatctgtttg ccgaaatcgg aaaaagcgaa 180
 atagacatcc agcgcaaaat tgacgagggc tttcagcact tgttttatgg cgacgcgaaa 240
 gatgcagctg tctactatca agcgggtgga aacgagaatg gtccactcgc atatgtttac 300
 gatgtgaaca gcaatgacgt gcgctcagaa ggcattgagct acggcatgat gattactgtt 360
 caaatggaca aaaaagccga gttcgatgca atctggaact gggcgaaaac ctatatgtat 420
 caagactccc ccacgcatcc agcgtttggt tactttgcct ggtccatgcg ccgcgatggg 480
 gtcgccaatg acgatatgcc agcgccagat ggcgaggaat atttcgtgac cgctctctat 540
 ttcgcccggc cccgctgggg taatggcgaa ggtattttca actaccaaca ggaagcggac 600
 accattttga gccgcatgcg ccaccgccag gtgatcaccg gcccaaccaa tcgcgagta 660
 atgactgcga ccaatctgtt ccaccgggaa gaggcgcaag tgcgcttcac gcccgacatc 720
 aataatgctg atcatacaga cgcgtcttac catctgccct cgttctatga aatttgggca 780
 cgtgtcgcgc cgcaagaaga tcgcgcgttt tgggccaag cggccgatgt gagccgcgac 840
 tattttgcc aagccgccc aacctgtact gcgttaacac cggactacgg taattttgat 900
 ggcaccccg gggcgccatc ctggcgccg gagtcggtag attttcgata cgatgcctgg 960
 cgttccgtca tgaactggtc catggactat gcctgggtgg gcaaagattc aggcgcacct 1020
 gcgcgcagtg ataaattact cgcgttcttc gaaacccagg aaggcaaaat gaaccacctc 1080
 tatagcctgg atggcaaacc gctgggtggg ggaccgacc tcggcctaatt ttccatgaat 1140
 gcaacggcag ctatggcagc tactgatccc cgctggcaca attttgtgga aaagctctgg 1200
 caacaacaac ccccccacag gcaataccgg tactacgacg gtgttctata cctgatggcg 1260
 ctgctacatt gcgctgggga gtacaaagcg tggatccccg acggggaata a 1311

<210> 10
 <211> 436
 <212> PRT
 <213> Unknown

<220>

<223> obtained from an environmental sample

<221> SIGNAL

<222> (1)...(36)

<400> 10

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Met Phe Pro Arg Leu Ser Pro Ser Arg Phe Arg Gln Val Thr Leu Thr
1      5      10      15
Leu Leu Thr Leu Gly Leu Val Ser Leu Thr Gly Cys Ala Gly Asn Ser
20      25      30
Lys Pro Asp Ala Asp Thr Ser Thr Ala Gly Ala Val Ala Thr Gly Glu
35      40      45
Tyr Arg Asn Leu Phe Ala Glu Ile Gly Lys Ser Glu Ile Asp Ile Gln
50      55      60
Arg Lys Ile Asp Glu Ala Phe Gln His Leu Phe Tyr Gly Asp Ala Lys
65      70      75      80
Asp Ala Ala Val Tyr Gln Ala Gly Gly Asn Glu Asn Gly Pro Leu
85      90      95
Ala Tyr Val Tyr Asp Val Asn Ser Asn Asp Val Arg Ser Glu Gly Met
100      105      110
Ser Tyr Gly Met Met Ile Thr Val Gln Met Asp Lys Lys Ala Glu Phe
115      120      125
Asp Ala Ile Trp Asn Trp Ala Lys Thr Tyr Met Tyr Gln Asp Ser Pro
130      135      140
Thr His Pro Ala Phe Gly Tyr Phe Ala Trp Ser Met Arg Arg Asp Gly
145      150      155      160
Val Ala Asn Asp Asp Met Pro Ala Pro Asp Gly Glu Glu Tyr Phe Val
165      170      175      180
Thr Ala Leu Tyr Phe Ala Ala Ala Arg Trp Gly Asn Gly Glu Gly Ile
185      190      195
Phe Asn Tyr Gln Gln Glu Ala Asp Thr Ile Leu Ser Arg Met Arg His
200      205      210
Arg Gln Val Ile Thr Gly Pro Thr Asn Arg Gly Val Met Thr Ala Thr
215      220      225
Asn Leu Phe His Pro Glu Ala Gln Val Arg Phe Thr Pro Asp Ile
230      235      240
Asn Asn Ala Asp His Thr Asp Ala Ser Tyr His Leu Pro Ser Phe Tyr
245      250      255      260
Glu Ile Trp Ala Arg Val Ala Pro Gln Glu Asp Arg Ala Phe Trp Ala
265      270      275
Lys Ala Ala Asp Val Ser Arg Asp Tyr Phe Ala Lys Ala Ala His Pro
280      285      290
Val Thr Ala Leu Thr Pro Asp Tyr Gly Asn Phe Asp Gly Thr Pro Trp
295      300      305
Ala Ala Ser Trp Arg Pro Glu Ser Val Asp Phe Arg Tyr Asp Ala Trp
310      315      320
Arg Ser Val Met Asn Trp Ser Met Asp Tyr Ala Trp Trp Gly Lys Asp
325      330      335
Ser Gly Ala Pro Ala Arg Ser Asp Lys Leu Leu Ala Phe Phe Glu Thr
340      345      350
Gln Glu Gly Lys Met Asn His Leu Tyr Ser Leu Asp Gly Lys Pro Leu
355      360      365
Gly Gly Gly Pro Thr Leu Gly Leu Ile Ser Met Asn Ala Thr Ala Ala
370      375      380
Met Ala Ala Thr Asp Pro Arg Trp His Asn Phe Val Glu Lys Leu Trp
385      390      395      400
Gln Gln Gln Pro Thr Gly Gln Tyr Arg Tyr Tyr Asp Gly Val Leu
405      410      415
Tyr Leu Met Ala Leu Leu His Cys Ala Gly Glu Tyr Lys Ala Trp Ile
420      425      430
Pro Asp Gly Glu
435

```

<210> 11

<211> 1224

<212> DNA

<213> Unknown

<220>

<223> obtained from an environmental sample

<400> 11

atgCGgaacg	tcgtgcgtaa	accattgaca	atcggactcg	ctttaacact	attattgccc	60
atgggaatga	cggcaacatc	agcgaagaat	gcagattcct	atgCGaaaaa	acctcacatc	120
agcgattga	atgccccaca	attggatcaa	cgctacaaaa	acgagttcac	gattgggtgcg	180
gcagtagaac	cttatcaact	acaaaatgaa	aaagacgtac	aatgctaaa	gcgccacttc	240
aacagcattg	ttgccgagaa	cgtaatgaaa	ccgatcagca	ttcaacctga	ggaaggaaaa	300
ttcaattttg	aacaagcgga	tcgaattgtg	aagttcgcta	aggcaaattg	catggatatt	360
cgcttcata	cactcgtttg	gcacagccaa	gtacctcaac	ggttctttct	tgacaaggaa	420
ggtaagccaa	tggatcaatga	aacagatcca	gtgaaacgtg	aacaaaataa	acaactgctg	480
ttaaaacgac	ttgaaactca	tattaaaacg	atcgctcgagc	ggtacaaaga	tgacattaag	540
tactgggacg	ttgttaaatga	ggttgtgggg	gacgacggaa	aactgcgcaa	ctctccatgg	600
tatcaaatcg	ccggcatcga	ttatatataa	gtggcattcc	aagcagctag	aaaatatggc	660
ggagacaaca	ttaaacttta	catgaatgat	tacaatacag	aagtcgaacc	gaagcgaacc	720
gctctttaca	atttagtcaa	acaactgaaa	gaagaggggtg	ttccgatcga	cggcatcggc	780
catcaatccc	acatccaaat	cggctggcct	tctgaagcag	aaatcgagaa	aacgattaac	840
atgttcgccc	ctttcgattt	agacaaccaa	atcactgagc	ttgatgtgag	catgtacggt	900
tggccgccc	gcgcttacct	gacgtatgac	gccattccaa	aacaaaagtt	tttggatcag	960
gcagcgcgct	atgatcgttt	gttcaaaactg	tatgagaagt	tgagcgataa	aattagcaac	1020
gtcaccttct	ggggcatcgc	cgacaatcat	acgtggctcg	acagccgtgc	ggatgtgtac	1080
tatgacgcca	acgggaatgt	tgtggttgac	ccgaacgctc	cgtacgcaaa	agtggaaaaa	1140
gggaaaggaa	aagatgcgcc	gttcgttttt	ggaccggatt	acaaagtcaa	acccgcatat	1200
tgggctatta	ttgaccacaa	atag				1224

<210> 12

<211> 407

<212> PRT

<213> Unknown

<220>

<223> obtained from an environmental sample

<221> SIGNAL

<222> (1)...(28)

<400> 12

Met	Arg	Asn	Val	Val	Arg	Lys	Pro	Leu	Thr	Ile	Gly	Leu	Ala	Leu	Thr
1				5					10					15	
Leu	Leu	Leu	Pro	Met	Gly	Met	Thr	Ala	Thr	Ser	Ala	Lys	Asn	Ala	Asp
			20					25					30		
Ser	Tyr	Ala	Lys	Lys	Pro	His	Ile	Ser	Ala	Leu	Asn	Ala	Pro	Gln	Leu
		35					40					45			
Asp	Gln	Arg	Tyr	Lys	Asn	Glu	Phe	Thr	Ile	Gly	Ala	Ala	Val	Glu	Pro
	50					55					60				
Tyr	Gln	Leu	Gln	Asn	Glu	Lys	Asp	Val	Gln	Met	Leu	Lys	Arg	His	Phe
	65				70					75				80	
Asn	Ser	Ile	Val	Ala	Glu	Asn	Val	Met	Lys	Pro	Ile	Ser	Ile	Gln	Pro
				85					90					95	
Glu	Glu	Gly	Lys	Phe	Asn	Phe	Glu	Gln	Ala	Asp	Arg	Ile	Val	Lys	Phe
			100					105					110		
Ala	Lys	Ala	Asn	Gly	Met	Asp	Ile	Arg	Phe	His	Thr	Leu	Val	Trp	His
		115					120					125			
Ser	Gln	Val	Pro	Gln	Arg	Phe	Phe	Leu	Asp	Lys	Glu	Gly	Lys	Pro	Met
	130					135					140				
Val	Asn	Glu	Thr	Asp	Pro	Val	Lys	Arg	Glu	Gln	Asn	Lys	Gln	Leu	Leu
	145				150				155					160	
Leu	Lys	Arg	Leu	Glu	Thr	His	Ile	Lys	Thr	Ile	Val	Glu	Arg	Tyr	Lys
				165					170					175	
Asp	Asp	Ile	Lys	Tyr	Trp	Asp	Val	Val	Asn	Glu	Val	Val	Gly	Asp	Asp
			180					185					190		
Gly	Lys	Leu	Arg	Asn	Ser	Pro	Trp	Tyr	Gln	Ile	Ala	Gly	Ile	Asp	Tyr
		195					200					205			
Ile	Lys	Val	Ala	Phe	Gln	Ala	Ala	Arg	Lys	Tyr	Gly	Gly	Asp	Asn	Ile
	210					215					220				
Lys	Leu	Tyr	Met	Asn	Asp	Tyr	Asn	Thr	Glu	Val	Glu	Pro	Lys	Arg	Thr
	225				230				235					240	
Ala	Leu	Tyr	Asn	Leu	Val	Lys	Gln	Leu	Lys	Glu	Glu	Gly	Val	Pro	Ile
				245					250					255	

Asp Gly Ile Gly His Gln Ser His Ile Gln Ile Gly Trp Pro Ser Glu
 260 265 270
 Ala Glu Ile Glu Lys Thr Ile Asn Met Phe Ala Ala Phe Gly Leu Asp
 275 280 285
 Asn Gln Ile Thr Glu Leu Asp Val Ser Met Tyr Gly Trp Pro Pro Arg
 290 295 300
 Ala Tyr Pro Thr Tyr Asp Ala Ile Pro Lys Gln Lys Phe Leu Asp Gln
 305 310 315 320
 Ala Ala Arg Tyr Asp Arg Leu Phe Lys Leu Tyr Glu Lys Leu Ser Asp
 325 330 335
 Lys Ile Ser Asn Val Thr Phe Trp Gly Ile Ala Asp Asn His Thr Trp
 340 345 350
 Leu Asp Ser Arg Ala Asp Val Tyr Tyr Asp Ala Asn Gly Asn Val Val
 355 360 365
 Val Asp Pro Asn Ala Pro Tyr Ala Lys Val Glu Lys Gly Lys Gly Lys
 370 375 380
 Asp Ala Pro Phe Val Phe Gly Pro Asp Tyr Lys Val Lys Pro Ala Tyr
 385 390 395 400
 Trp Ala Ile Ile Asp His Lys
 405

<210> 13
 <211> 1053
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 13
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 ggcgcggcgg ttagcagctt catgacctt gatcccgctt accgcgccct gatccgccgc 120
 cattacaatt ccctgacggc ggacaaccag atgaagccgg aaagcgtgtt ggatcgccacc 180
 ggcaccctgg cgaaggggcga cctgctccac gctgcgggtg atttcacccg tgtggacgcg 240
 ctgatgtact ttgcacggga caacgggatc cccatgcggt atcacaccct ggcctggcac 300
 aaccagacgc cccgctgggt cttcgcgaa gactggagcg acgcggaaag cgccgaaccc 360
 gcctcaaagg aaaccatgct tgcccgtctg gaaaactata tcctggatgt catgaaccat 420
 gtgaatacca agtttcccgg tctggtttac acctgggacg tggtaaaccga agccattgag 480
 ccagagctga aagccccggg attgtaccgg acctggagcc cctgggtcaa aacctgcgga 540
 gaagatttcc tctttaccgc tttccgggccc gcccgcaagg gacaggcgcc cggtcagacc 600
 ctttgctata acgactataa cgccttcgag cccgtcaagc gggacgcgat tatcgatctg 660
 ctgaagaagc tgcaggcgga aaacctggtg gataccatgg gtatgcaggg gcattatgtc 720
 atggactgga tgaacatctc gctctgcgaa gaggccgccc ggcgcctatgc cgccctgggc 780
 ctgaaggtcc aggtcaccga gctggatatc cactgcaaca gcgacgatga agcccaacag 840
 caaaagctgg cgcagcttta cggcgattat ttcgccatgc tgaagaagct gaaggaggaa 900
 ggcgtcgaca tcgaagccgt caccttctgg ggcgtcaccg accaggacag ctggctcacc 960
 ggtttccgta aagagacaag ctatcccctc ctcttcgacc gcgccaagca ggccaaggat 1020
 gcctatgacg ccgtcatgaa agccgcggaa taa 1053

<210> 14
 <211> 350
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 14
 Met Lys Asp Ala Leu Gln Cys Ser Pro Leu Phe Lys Ala Tyr Glu Lys
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 Tyr Phe Arg Ile Gly Ala Ala Val Ser Ser Phe Met Thr Phe Asp Pro
 20 25 30
 Ala Tyr Arg Ala Leu Ile Arg Arg His Tyr Asn Ser Leu Thr Ala Asp
 35 40 45
 Asn Gln Met Lys Pro Glu Ser Val Leu Asp Arg Thr Ala Thr Leu Ala
 50 55 60
 Lys Gly Asp Leu Leu His Ala Ala Val Asp Phe Thr Arg Val Asp Ala
 65 70 75 80
 Leu Met Tyr Phe Ala Arg Asp Asn Gly Ile Pro Met Arg Tyr His Thr

Leu	Ala	Trp	His	Asn	Gln	Thr	Pro	Arg	Trp	Phe	Phe	Ala	Lys	Asp	Trp
			100					105					110		
Ser	Asp	Ala	Glu	Ser	Ala	Glu	Pro	Ala	Ser	Lys	Glu	Thr	Met	Leu	Ala
		115					120					125			
Arg	Leu	Glu	Asn	Tyr	Ile	Leu	Asp	Val	Met	Asn	His	Val	Asn	Thr	Lys
	130				135						140				
Phe	Pro	Gly	Leu	Val	Tyr	Thr	Trp	Asp	Val	Val	Asn	Glu	Ala	Ile	Glu
145					150					155					160
Pro	Glu	Leu	Lys	Ala	Pro	Gly	Leu	Tyr	Arg	Thr	Trp	Ser	Pro	Trp	Phe
			165						170					175	
Lys	Thr	Cys	Gly	Glu	Asp	Phe	Leu	Phe	Thr	Ala	Phe	Arg	Ala	Ala	Arg
			180					185					190		
Lys	Gly	Gln	Ala	Pro	Gly	Gln	Thr	Leu	Cys	Tyr	Asn	Asp	Tyr	Asn	Ala
		195					200					205			
Phe	Glu	Pro	Val	Lys	Arg	Asp	Ala	Ile	Ile	Asp	Leu	Leu	Lys	Lys	Leu
	210					215					220				
Gln	Ala	Glu	Asn	Leu	Val	Asp	Thr	Met	Gly	Met	Gln	Gly	His	Tyr	Val
225					230					235					240
Met	Asp	Trp	Met	Asn	Ile	Ser	Leu	Cys	Glu	Glu	Ala	Ala	Arg	Ala	Tyr
			245						250					255	
Ala	Ala	Leu	Gly	Leu	Lys	Val	Gln	Val	Thr	Glu	Leu	Asp	Ile	His	Cys
			260					265					270		
Asn	Ser	Asp	Asp	Glu	Ala	His	Ser	Gln	Lys	Leu	Ala	Gln	Leu	Tyr	Gly
		275					280					285			
Asp	Tyr	Phe	Ala	Met	Leu	Lys	Lys	Leu	Lys	Glu	Glu	Gly	Val	Asp	Ile
	290					295				300					
Glu	Ala	Val	Thr	Phe	Trp	Gly	Val	Thr	Asp	Gln	Asp	Ser	Trp	Leu	Thr
305					310					315					320
Gly	Phe	Arg	Lys	Glu	Thr	Ser	Tyr	Pro	Leu	Leu	Phe	Asp	Arg	Ala	Lys
			325						330					335	
Gln	Ala	Lys	Asp	Ala	Tyr	Asp	Ala	Val	Met	Lys	Ala	Ala	Glu		
			340					345					350		

<210> 15
 <211> 1110
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 15																
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gcagaaccca	ccctccgcga	agcctacgaa	aagcactttg	ccgtgggtgt	cgcaactcaat											120
accgctcaag	tgactggctg	aaacaaagcc	gcaggcgaac	tcgccgcgaa	gcagttcaat											180
tccatcaccg	ctgagaatga	catgaagtgg	caatcgcttc	atccagagct	cgatacctac											240
cgctttgaat	cggccgatgc	ctatatcgac	tttgccaaaa	agaatgagat	ggaagtcata											300
ggccacactc	tcgtctggca	cagccagacc	cctcagtggg	tggtccaagg	cgacgatggc											360
aaaccgcgca	cacgggaaga	acttctcaag	cggatgcgcg	atcacattca	caaggctcgc											420
ggccgataca	agggtaaggt	caagggtctg	gacgtcgtca	atgaggcgct	ctccgacgga											480
ggtcaggaca	ttctacgcga	atctccgtgg	cggcgaatca	tcggagacga	tttcatcgat											540
cacgctttcc	gctacgccc	cgaagccgac	ccaaaggcag	aactttacta	caacgactac											600
aacctcgaaa	tccctcgcaa	acgcgagaac	tgcatcaagc	tcgtcaaggg	catgcttgag											660
cgcggcgtcc	ccatcgacgg	cattggaacg	caatcccatt	ttcagcttgg	cttcccatcg											720
ctggaagatg	tcgagaccac	gattgaagag	tttggaatac	tcggccttaa	ggatcatgatt											780
accgaactcg	atgtggatgt	cctccctcgc	aataaccag	gcgtcgccga	catcagtcag											840
cgcgagcaag	gtagcaatcc	ctacactgag	ggcctgccc	aggatgttca	aaagcagctt											900
acgaaacgct	acgaagacat	cttcaagatc	tacctaagc	accagaaaac	ggatcaccgc											960
gtgaccttct	ggggcctcga	tgatgggtcaa	tcattggtga	atggccttcc	tgtagaggc											1020
cgcaccaatc	acccgctact	tttcgatcgt	gaactcaaac	cgaagcccgt	tcttccagtc											1080
ttgatagagc	tcggcaagaa	gaagcgataa														1110

<210> 16
 <211> 369
 <212> PRT
 <213> Unknown

<220>

<223> obtained from an environmental sample

<221> SIGNAL

<222> (1)...(20)

<400> 16

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Met Lys Arg Pro Leu Val Asn Leu Leu Thr Thr Ala Cys Leu Leu Val
1      5      10      15
Ala Ala Asn Ala Ala Glu Pro Thr Leu Arg Glu Ala Tyr Glu Lys His
20      25      30
Phe Ala Val Gly Val Ala Leu Asn Thr Ala Gln Val Thr Gly Arg Asn
35      40      45
Lys Ala Ala Gly Glu Leu Ala Ala Lys Gln Phe Asn Ser Ile Thr Ala
50      55      60
Glu Asn Asp Met Lys Trp Gln Ser Leu His Pro Glu Leu Asp Thr Tyr
65      70      75      80
Arg Phe Glu Ser Ala Asp Ala Tyr Ile Asp Phe Ala Lys Lys Asn Glu
85      90      95
Met Glu Val Ile Gly His Thr Leu Val Trp His Ser Gln Thr Pro Gln
100     105     110
Trp Val Phe Gln Gly Asp Asp Gly Lys Pro Ala Thr Arg Glu Glu Leu
115     120     125
Leu Lys Arg Met Arg Asp His Ile His Lys Val Ala Gly Arg Tyr Lys
130     135     140
Gly Lys Val Lys Gly Trp Asp Val Val Asn Glu Ala Leu Ser Asp Gly
145     150     155     160
Gly Gln Asp Ile Leu Arg Glu Ser Pro Trp Arg Arg Ile Ile Gly Asp
165     170     175
Asp Phe Ile Asp His Ala Phe Arg Tyr Ala Arg Glu Ala Asp Pro Lys
180     185     190
Ala Glu Leu Tyr Tyr Asn Asp Tyr Asn Leu Glu Ile Pro Arg Lys Arg
195     200     205
Glu Asn Cys Ile Lys Leu Val Lys Gly Met Leu Glu Arg Gly Val Pro
210     215     220
Ile Asp Gly Ile Gly Thr Gln Ser His Phe Gln Leu Gly Phe Pro Ser
225     230     235     240
Leu Glu Asp Val Glu Thr Thr Ile Glu Glu Phe Gly Lys Leu Gly Leu
245     250     255
Lys Val Met Ile Thr Glu Leu Asp Val Asp Val Leu Pro Arg Asn Asn
260     265     270
Pro Gly Val Ala Asp Ile Ser Gln Arg Glu Gln Gly Ser Asn Pro Tyr
275     280     285
Thr Glu Gly Leu Pro Glu Asp Val Gln Lys Gln Leu Thr Lys Arg Tyr
290     295     300
Glu Asp Ile Phe Lys Ile Tyr Leu Lys His Gln Lys Thr Val Thr Arg
305     310     315     320
Val Thr Phe Trp Gly Leu Asp Asp Gly Gln Ser Trp Leu Asn Gly Phe
325     330     335
Pro Val Arg Gly Arg Thr Asn His Pro Leu Leu Phe Asp Arg Glu Leu
340     345     350
Lys Pro Lys Pro Val Leu Pro Val Leu Ile Glu Leu Gly Lys Lys Lys
355     360     365
Arg

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<210> 17

<211> 1035

<212> DNA

<213> Bacteria

<400> 17

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aagtacttcg gctcggccac cgacaacccc gagttcaccg acgccgccta tctgaagctc      180
ctcggcagcg agttcgggca gaccacccc ggcaacgcca tgaagtggta cgccaccgaa      240
cccgcgcccg gcgtcttcga cttcaccgcg ggcgacgagg tcgtggcctt cgccaaggcc      300
catcacaga aggtccgcgg ccacaccctc gtctggcaca gccagctccc cgcttggtc      360
accgagcgca gctggaccgc cgcggaactg cgccccgtcc tcaagaatca catccagaag      420
gtggcccggc actacaaggg caaggtcatc cactgggacg tcgtcaacga ggccttcaac      480

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gaggacggca	cctaccgcga	gtcgggtcttc	tacaagacgc	tgggccccgg	ctacatcgcc	540
gacgccctgc	gctggggccca	cgaggccgac	ccgcacgcca	agctgtacct	caacgactac	600
aacgtcgacg	ggatcggccc	caagagcgac	gcctactacc	gcctgatcaa	gcagctgaag	660
gccgacggcg	tcccgggtga	gggcttcggc	atccaggggc	acctggcgct	ccagtacggc	720
ttccccgccg	acgtcaagca	gaacatgcag	cgcttcgccg	acctcggcgt	cgaggctcgcg	780
gtcaccgagc	tcgacatccg	gatgaacctc	ccggcgaccc	cttcgatgct	cgccacccag	840
gccacctggt	acgccgacta	cgtaaggcc	tgcttgagg	tcaggaagtg	cgtcggcgctc	900
accatctggg	actacaccga	caagtactcg	tgatccccct	ccgtcttccc	cggtgagggc	960
gccgcgctgc	cctacgcaga	gaacctggcg	cccaagccc	cctaccacgc	gatcaggaag	1020
gtgctggg	gatga					1035

<210> 18
 <211> 344
 <212> PRT
 <213> Bacteria

<220>
 <221> SIGNAL
 <222> (1)...(31)

<400> 18
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 1 5 10 15
 Gly Leu Ala Ala Ala Pro Ala Ser Ala Glu Pro Arg Pro Arg Thr Leu
 20 25 30
 Gly Glu Leu Ala Lys Lys His His Lys Tyr Phe Gly Ser Ala Thr Asp
 35 40 45
 Asn Pro Glu Phe Thr Asp Ala Ala Tyr Leu Lys Leu Leu Gly Ser Glu
 50 55 60
 Phe Gly Gln Thr Thr Pro Gly Asn Ala Met Lys Trp Tyr Ala Thr Glu
 65 70 75 80
 Pro Ala Pro Gly Val Phe Asp Phe Thr Ala Gly Asp Glu Val Val Ala
 85 90 95
 Phe Ala Lys Ala His His Gln Lys Val Arg Gly His Thr Leu Val Trp
 100 105 110
 His Ser Gln Leu Pro Ala Trp Leu Thr Glu Arg Ser Trp Thr Ala Ala
 115 120 125
 Glu Leu Arg Pro Val Leu Lys Asn His Ile Gln Lys Val Ala Arg His
 130 135 140
 Tyr Lys Gly Lys Val Ile His Trp Asp Val Val Asn Glu Ala Phe Asn
 145 150 155 160
 Glu Asp Gly Thr Tyr Arg Glu Ser Val Phe Tyr Lys Thr Leu Gly Pro
 165 170 175
 Gly Tyr Ile Ala Asp Ala Leu Arg Trp Ala His Glu Ala Asp Pro His
 180 185 190
 Ala Lys Leu Tyr Leu Asn Asp Tyr Asn Val Asp Gly Ile Gly Pro Lys
 195 200 205
 Ser Asp Ala Tyr Tyr Arg Leu Ile Lys Gln Leu Lys Ala Asp Gly Val
 210 215 220
 Pro Val Glu Gly Phe Gly Ile Gln Gly His Leu Ala Leu Gln Tyr Gly
 225 230 235 240
 Phe Pro Ala Asp Val Lys Gln Asn Met Gln Arg Phe Ala Asp Leu Gly
 245 250 255
 Val Glu Val Ala Val Thr Glu Leu Asp Ile Arg Met Asn Leu Pro Ala
 260 265 270
 Thr Pro Ser Met Leu Ala Thr Gln Ala Thr Trp Tyr Ala Asp Tyr Val
 275 280 285
 Lys Ala Cys Leu Glu Val Arg Lys Cys Val Gly Val Thr Ile Trp Asp
 290 295 300
 Tyr Thr Asp Lys Tyr Ser Trp Ile Pro Ser Val Phe Pro Gly Glu Gly
 305 310 315 320
 Ala Ala Leu Pro Tyr Asp Glu Asn Leu Ala Pro Lys Pro Ala Tyr His
 325 330 335
 Ala Ile Arg Lys Val Leu Gly Gly
 340

<210> 19
 <211> 1152
 <212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample

<400> 19

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tcagccactt	tacagaacct	gaagcgggct	cctgattcat	tgaccttgaa	agatgcattt	120
gagggtaagt	tttatatagg	aacagcatta	aaccttgatc	agatatggga	gcgcgatcag	180
gctgcggtcg	cggtggtcaa	aacgcagttc	aactccatag	ttgctgagaa	ttgtatgaaa	240
agtatgtttt	tgcaaccaag	ggaagggtgag	tttgatttta	gggatgcgga	ccgttttgtc	300
gcgtttggag	aaaaaaataa	aatgcaaatt	atcggtcata	cgctgatttg	gcattcgcag	360
acaccagctt	ggttttttgt	cgataaaaat	gggaaagagg	tcacccgaga	ggtacttatc	420
gagcgcattg	ggaagcatat	acaaaccgtt	gtttcccgct	ataagggaag	ggtgtttggt	480
tgggatgtgg	tgaacgaagc	catattggat	aatggagaat	ggcgtaaaag	caaattctac	540
cagattatcg	ggccacaatt	tattgaattg	gccttcaaat	ttgcgcatga	cgcagatcca	600
aatgcagaat	tattattataa	cgattattca	actgctatcc	ccgaaaaaag	aaaggggatt	660
atgcgcattg	tgacgcaggt	aaaggctgcc	ggtgggcagg	tcactggaat	tggtatgcag	720
gaacacaacg	cattggacaa	tccaccggct	gatgaagtcg	aaaaaaccat	actcggattt	780
gcaagccttg	gtgcgaaggt	aatggttacg	gaaatggata	tttcggtcct	gccgcagtga	840
cgtcccaata	tgggcgcaga	aatagggggag	cgctatgcct	acagtaaagc	gatgaatccg	900
tacgaaaaag	gacttcctgt	aacgaaaaatg	aacgagttgg	gagcgagata	tgtagcgttt	960
tttaatttat	atctcaaaaca	tcgggataaa	atatcgcggtg	tgacattgtg	gggtgttggc	1020
gatggagatt	catggaagaa	tggttggcct	attcccggac	gtacagacta	tccattgtta	1080
ttcgatcgga	attaccaacc	caaaccctttt	gtaaaagata	ttattgcgtt	gactcaaaaa	1140
aaaaagaagt	aa					1152

<210> 20

<211> 383

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample

<221> SIGNAL

<222> (1)...(29)

<400> 20

Met	Lys	Met	Leu	Lys	Thr	Ile	Val	Val	Ala	Val	Ala	Ala	Leu	Leu	Ser
1				5					10					15	
Ser	Pro	Thr	Ala	Ser	Ala	Thr	Leu	Gln	Asn	Leu	Lys	Arg	Ala	Pro	Asp
			20					25					30		
Ser	Leu	Thr	Leu	Lys	Asp	Ala	Phe	Glu	Gly	Lys	Phe	Tyr	Ile	Gly	Thr
			35				40					45			
Ala	Leu	Asn	Leu	Asp	Gln	Ile	Trp	Glu	Arg	Asp	Gln	Ala	Ala	Val	Ala
	50				55						60				
Val	Val	Lys	Thr	Gln	Phe	Asn	Ser	Ile	Val	Ala	Glu	Asn	Cys	Met	Lys
	65			70						75				80	
Ser	Met	Phe	Leu	Gln	Pro	Arg	Glu	Gly	Glu	Phe	Asp	Phe	Arg	Asp	Ala
			85					90						95	
Asp	Arg	Phe	Val	Ala	Phe	Gly	Glu	Lys	Asn	Lys	Met	Gln	Ile	Ile	Gly
			100					105					110		
His	Thr	Leu	Ile	Trp	His	Ser	Gln	Thr	Pro	Ala	Trp	Phe	Phe	Val	Asp
		115					120					125			
Lys	Asn	Gly	Lys	Glu	Val	Thr	Arg	Glu	Val	Leu	Ile	Glu	Arg	Met	Arg
	130					135					140				
Lys	His	Ile	Gln	Thr	Val	Val	Ser	Arg	Tyr	Lys	Gly	Arg	Val	Phe	Gly
	145				150					155				160	
Trp	Asp	Val	Val	Asn	Glu	Ala	Ile	Leu	Asp	Asn	Gly	Glu	Trp	Arg	Lys
			165					170						175	
Ser	Lys	Phe	Tyr	Gln	Ile	Ile	Gly	Pro	Gln	Phe	Ile	Glu	Leu	Ala	Phe
			180					185					190		
Lys	Phe	Ala	His	Asp	Ala	Asp	Pro	Asn	Ala	Glu	Leu	Tyr	Tyr	Asn	Asp
		195					200					205			
Tyr	Ser	Thr	Ala	Ile	Pro	Glu	Lys	Arg	Lys	Gly	Ile	Met	Arg	Met	Val
	210					215					220				
Gln	Gln	Val	Lys	Ala	Ala	Gly	Gly	Gln	Val	Thr	Gly	Ile	Gly	Met	Gln
	225				230					235				240	

Glu His Asn Ala Leu Asp Asn Pro Pro Val Asp Glu Val Glu Lys Thr
 245 250 255
 Ile Leu Gly Phe Ala Ser Leu Gly Ala Lys Val Met Val Thr Glu Met
 260 265 270
 Asp Ile Ser Val Leu Pro His Val Arg Pro Asn Met Gly Ala Glu Ile
 275 280 285
 Gly Glu Arg His Ala Tyr Ser Lys Ala Met Asn Pro Tyr Glu Lys Gly
 290 295 300
 Leu Pro Val Thr Lys Met Asn Glu Leu Gly Ala Arg Tyr Val Ala Phe
 305 310 315 320
 Phe Asn Leu Tyr Leu Lys His Arg Asp Lys Ile Ser Arg Val Thr Leu
 325 330 335
 Trp Gly Val Gly Asp Gly Asp Ser Trp Lys Asn Gly Trp Pro Ile Pro
 340 345 350
 Gly Arg Thr Asp Tyr Pro Leu Leu Phe Asp Arg Asn Tyr Gln Pro Lys
 355 360 365
 Pro Phe Val Lys Asp Ile Ile Ala Leu Thr Gln Lys Lys Lys
 370 375 380

<210> 21

<211> 1119

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample

<400> 21

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gctgtcacag	gcaccacca	atccgaggac	tcgcccgcga	ctttgaaaga	cgcttcaag	120
gattgtttcc	ggatcggggg	cgcgctcaac	cagcggaat	ttaccgagca	agataccaac	180
ggcgcgacgt	tggtgaaacg	gcagttcaac	gccatctcac	ccgaaaacgt	gatgaagtgg	240
gcgaacattc	atccccgacc	cgggcccgat	gggtataact	tcgagggcgg	tgaccgttac	300
gtcgaagttg	gcgagaagaa	cggaatgttc	atcgctcgcc	atacgctcgt	ttggcacttc	360
caaacgccgc	gctgggtact	ccagggcgat	ggcactaacg	cggcgacgcg	cgagctgctg	420
ctgcagcgga	tgcgcgatca	catccacacg	gtcgtaggcc	ggtacaaagg	gcggatcaag	480
gcttgggacg	tggtcaacga	agcgctgaac	gaagatggca	ctctgcggcg	gtcgcagtgg	540
taccggatca	tcggcggaaga	ctacatcgtc	aaggctttcg	aatatgcgca	tgaggccgat	600
ccgtccgcgg	aattgcgata	caacgattac	gccatcgaga	atgagcgga	gcgcgacggc	660
gtaatcgcg	tcgtgaagaa	acttcaggcg	cagaaggctc	cacttggggg	gctgggctcg	720
cagacgcatg	ccaacctgac	ctggccctaac	gccgaatcgc	tggaacaccg	cctcacggcc	780
ttcaccgaac	tggttatccc	gatctcaatc	acggaactgg	atgtgaccgc	ctcgcaacgc	840
ggtcagctca	accagagcgc	cgagggtgctg	cagaatggac	aggcggggga	gggaggcgtg	900
gtggacgggg	cgaatcagaa	gctcgccgag	cagtacgcca	acttcttccg	cgctcttctg	960
aagcatcgca	aaaacattga	gctcgtgacg	ttttggggcg	tcacggatcg	tgactcctgg	1020
cggcgcattg	gcaaaccgct	gctatttaac	gcagaatggc	aaccaagcc	ggcctttcac	1080
gccgtcatcg	ccgaggcgaa	aaagatcagt	gggcaatga			1119

<210> 22

<211> 372

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample

<221> SIGNAL

<222> (1)...(28)

<400> 22

Met Arg Ile His Trp Leu Gly Leu Ser Ser Arg Ala Ser Leu Met Thr
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 Ala Ala Leu Leu Ala Val Thr Gly Thr Lys Ser Glu Asp Ser Pro
 20 25 30
 Ala Thr Leu Lys Asp Ala Phe Lys Asp Cys Phe Arg Ile Gly Val Ala
 35 40 45
 Leu Asn Gln Arg Gln Phe Thr Glu Gln Asp Thr Asn Gly Ala Thr Leu
 50 55 60
 Val Lys Arg Gln Phe Asn Ala Ile Ser Pro Glu Asn Val Met Lys Trp

65	Ala	Asn	Ile	His	Pro	Arg	Pro	Gly	Pro	Asp	Gly	Tyr	Asn	Phe	Glu	Ala
					85					90					95	
	Ala	Asp	Arg	Tyr	Val	Glu	Phe	Gly	Glu	Lys	Asn	Gly	Met	Phe	Ile	Val
			100						105					110		
	Gly	His	Thr	Leu	Val	Trp	His	Phe	Gln	Thr	Pro	Arg	Trp	Val	Leu	Gln
			115					120					125			
	Gly	Asp	Gly	Thr	Asn	Ala	Ala	Thr	Arg	Glu	Leu	Leu	Gln	Arg	Met	
			130				135					140				
	Arg	Asp	His	Ile	His	Thr	Val	Val	Gly	Arg	Tyr	Lys	Gly	Arg	Ile	Lys
			145			150					155				160	
	Ala	Trp	Asp	Val	Val	Asn	Glu	Ala	Leu	Asn	Glu	Asp	Gly	Thr	Leu	Arg
				165						170					175	
	Arg	Ser	Gln	Trp	Tyr	Arg	Ile	Ile	Gly	Glu	Asp	Tyr	Ile	Val	Lys	Ala
			180						185					190		
	Phe	Glu	Tyr	Ala	His	Glu	Ala	Asp	Pro	Ser	Ala	Glu	Leu	Arg	Tyr	Asn
			195					200					205			
	Asp	Tyr	Ala	Ile	Glu	Asn	Glu	Arg	Lys	Arg	Asp	Gly	Val	Ile	Ala	Leu
			210				215					220				
	Val	Lys	Lys	Leu	Gln	Ala	Gln	Lys	Val	Pro	Leu	Gly	Gly	Leu	Gly	Ser
			225			230					235					240
	Gln	Thr	His	Ala	Asn	Leu	Thr	Trp	Pro	Asn	Ala	Glu	Ser	Leu	Asp	Thr
				245						250					255	
	Ala	Leu	Thr	Ala	Phe	Thr	Glu	Leu	Gly	Ile	Pro	Ile	Ser	Ile	Thr	Glu
			260						265					270		
	Leu	Asp	Val	Thr	Ala	Ser	Gln	Arg	Gly	Gln	Leu	Asn	Gln	Ser	Ala	Glu
			275					280					285			
	Val	Ser	Gln	Asn	Gly	Gln	Ala	Gly	Glu	Gly	Gly	Val	Val	Asp	Gly	Ala
			290				295					300				
	Asn	Gln	Lys	Leu	Ala	Glu	Gln	Tyr	Ala	Asn	Phe	Phe	Arg	Val	Phe	Leu
			305			310				315					320	
	Lys	His	Arg	Lys	Asn	Ile	Glu	Leu	Val	Thr	Phe	Trp	Gly	Val	Thr	Asp
				325						330					335	
	Arg	Asp	Ser	Trp	Arg	Arg	Ile	Gly	Lys	Pro	Leu	Leu	Phe	Asn	Ala	Glu
			340						345					350		
	Trp	Gln	Pro	Lys	Pro	Ala	Phe	His	Ala	Val	Ile	Ala	Glu	Ala	Lys	Lys
			355					360					365			
	Ile	Ser	Gly	Gln												
			370													

<210> 23

<211> 1137

<212> DNA

<213> Unknown

<220>

<223> obtained from an environmental sample

<400> 23

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aaattcttta	ttggtgctgc	tgtaaatggt	gaccaaattg	caggaaagga	ttctcttgca	180
attgaagttg	ttaaaaagaa	ctttagctca	attgtggccg	agaattgcat	gaaaatggaa	240
aacatccatc	ctgtaaaagg	tgaatttttc	ttcgaatgaag	ccgatgcata	tgttgaattt	300
ggcgaaaaaa	acaacatgaa	aatcattggt	cacacattga	tttggcattc	acaagccgcc	360
aaatgggcat	ttgttgatga	tgaaggcaaa	gatgtatcgc	gcgaagaatt	aattgaacgg	420
atgcgcaacc	acatccatac	cattgtaggc	cgctataaag	gtcgtgtaca	tggtggggac	480
gttggttaatg	aggctattct	ggataacggc	gaatggcgtc	agagcaaattg	gtataaccatt	540
attggaccgg	aatttggttca	gcttgctttt	gagtttgccc	acgaagccga	ccccaacgct	600
gaattgtatt	acaacgacta	caacgagtgg	attccggcta	aaagagacgg	catttacaac	660
atgggttaagg	atttaatcga	caaaggcggt	aaagttgatg	gaattggcct	acaggggtcac	720
attgctcttg	actctcccag	catcgaactt	tacgaagaag	ccattgtaaa	atatgcaagt	780
ctgggtgtgc	aaacaatggt	taccgaactc	gatatcactg	ttttaccatg	gccatcgag	840
caagttacag	ccgatataatc	ttttagtgcg	gagctatcaa	ccgaatacaa	tccatttggt	900
aatgggtttac	ccgattcggt	tagcgttgaa	cttaccaacc	gttttgccag	tttcttcgag	960
ttgtttttga	aacatcagga	taaaattgac	cgcgttactc	tatgggggtgt	acacgatgggt	1020
caatcatgga	aaaacaactg	gccatcagg	ggacgtaaag	attatccggt	gttattcgac	1080
aggcaatatc	agtccaaaacc	tgccgttcag	cgcataatcg	aattggctaa	acaataa	1137

<210> 24
 <211> 378
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(29)

<400> 24
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 20 25 30
 Thr Leu Lys Asp Ala Leu Gln Gly Lys Phe Phe Ile Gly Ala Ala Val
 35 40 45
 Asn Val Asp Gln Met Ala Gly Lys Asp Ser Leu Ala Ile Glu Val Val
 50 55 60
 Lys Lys Asn Phe Ser Ser Ile Val Ala Glu Asn Cys Met Lys Met Glu
 65 70 75 80
 Asn Ile His Pro Val Lys Gly Glu Phe Phe Phe Asp Glu Ala Asp Ala
 85 90 95
 Tyr Val Glu Phe Gly Glu Lys Asn Asn Met Lys Ile Ile Gly His Thr
 100 105 110
 Leu Ile Trp His Ser Gln Ala Ala Lys Trp Ala Phe Val Asp Asp Glu
 115 120 125
 Gly Lys Asp Val Ser Arg Glu Glu Leu Ile Glu Arg Met Arg Asn His
 130 135 140
 Ile His Thr Ile Val Gly Arg Tyr Lys Gly Arg Val His Gly Trp Asp
 145 150 155 160
 Val Val Asn Glu Ala Ile Leu Asp Asn Gly Glu Trp Arg Gln Ser Lys
 165 170 175
 Trp Tyr Thr Ile Ile Gly Pro Glu Phe Val Gln Leu Ala Phe Glu Phe
 180 185 190
 Ala His Glu Ala Asp Pro Asn Ala Glu Leu Tyr Tyr Asn Asp Tyr Asn
 195 200 205
 Glu Trp Ile Pro Ala Lys Arg Asp Gly Ile Tyr Asn Met Val Lys Asp
 210 215 220
 Leu Ile Asp Lys Gly Val Lys Val Asp Gly Ile Gly Leu Gln Gly His
 225 230 235 240
 Ile Ala Leu Asp Ser Pro Ser Ile Glu Leu Tyr Glu Glu Ala Ile Val
 245 250 255
 Lys Tyr Ala Ser Leu Gly Val Gln Thr Met Val Thr Glu Leu Asp Ile
 260 265 270
 Thr Val Leu Pro Trp Pro Ser Gln Gln Val Thr Ala Asp Ile Ser Phe
 275 280 285
 Ser Ala Glu Leu Ser Thr Glu Tyr Asn Pro Phe Val Asn Gly Leu Pro
 290 295 300
 Asp Ser Val Ser Val Glu Leu Thr Asn Arg Phe Ala Ser Phe Phe Glu
 305 310 315 320
 Leu Phe Leu Lys His Gln Asp Lys Ile Asp Arg Val Thr Leu Trp Gly
 325 330 335
 Val His Asp Gly Gln Ser Trp Lys Asn Asn Trp Pro Ile Arg Gly Arg
 340 345 350
 Lys Asp Tyr Pro Leu Leu Phe Asp Arg Gln Tyr Gln Ser Lys Pro Ala
 355 360 365
 Val Gln Arg Ile Ile Glu Leu Ala Lys Gln
 370 375

<210> 25
 <211> 978
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 25

gtggatccaa	agaattcctt	acgcgcctta	gctcaaaagc	gaggaattgg	gtttgggacg	60
gcagtttggg	ttgagcctct	gtctaacgat	tgcagatata	ggacggtggt	ggcgcaggag	120
ttcaatatgg	tgacgccaga	gaatgagatg	aagtttgagc	cgacgcatcc	agaacgggag	180
cgctacgatt	ttacagcagc	cgataccctt	gttgactttg	ccaagaacca	taacatgcag	240
gtgcgcggac	ataccctggg	ttggcatgaa	agtctccccg	attggctaac	gactcaaacg	300
tggaacgcgtg	aggagttgat	gtccatctta	gaagaacaca	tcaatacagt	tgatcgatcg	360
tatcgggggc	aattagttgc	ctgggatgtg	gtgaatgaag	cgatcgccaa	cgataaaaac	420
gcactcagag	atacgatttg	gctgcgaaca	atcgggccag	agtatataga	gaaggcattt	480
cgctggggcg	atgcagccga	ccctcaagca	cgtttatttt	acaacgatta	tggcggcgag	540
gaagtggggg	gaaagtctga	ggccatctat	ggcatgctta	aagatttgct	gcaacagggg	600
gtcccgaattc	acgggggttg	cttgcaaagt	cacgttagta	taaaaaaccc	tcccaatccc	660
gaaaaagtgg	cggcaaatat	caagcgccctg	aacgatctgg	gattggaagt	gcatataact	720
gagatggatg	tgaaaacctg	ggatggcctc	ggtacgaagc	agcaacgact	tgccggtcag	780
gcacaagtgt	atcgggaacat	gatgcagggtg	tgtttggaag	ctgagaactg	taaggcggtt	840
tcgttggtggg	gggtaagcga	tcgctattct	tggtattccc	ggatttttaa	gaagccggat	900
gcaccactga	tttttgatga	tttagggcgt	ccgaaacccg	cttacaatgc	cctgaaagaa	960
gtcctcaagc	ggcgttaa					978

<210> 26

<211> 325

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample

<400> 26

Val	Asp	Pro	Lys	Asn	Ser	Leu	Arg	Ala	Leu	Ala	Gln	Lys	Arg	Gly	Ile
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Gly	Phe	Gly	Thr	Ala	Val	Trp	Val	Glu	Pro	Leu	Ser	Asn	Asp	Ser	Arg
			20					25					30		
Tyr	Arg	Thr	Val	Leu	Ala	Gln	Glu	Phe	Asn	Met	Val	Thr	Pro	Glu	Asn
		35					40					45			
Glu	Met	Lys	Phe	Glu	Pro	Thr	His	Pro	Glu	Arg	Glu	Arg	Tyr	Asp	Phe
	50					55					60				
Thr	Ala	Ala	Asp	Thr	Leu	Val	Asp	Phe	Ala	Lys	Asn	His	Asn	Met	Gln
65					70				75						80
Val	Arg	Gly	His	Thr	Leu	Val	Trp	His	Glu	Ser	Leu	Pro	Asp	Trp	Leu
			85					90						95	
Thr	Thr	Gln	Thr	Trp	Thr	Arg	Glu	Glu	Leu	Met	Ser	Ile	Leu	Glu	Glu
		100					105						110		
His	Ile	Asn	Thr	Val	Val	Asp	Arg	Tyr	Arg	Gly	Gln	Leu	Val	Ala	Trp
		115					120					125			
Asp	Val	Val	Asn	Glu	Ala	Ile	Ala	Asn	Asp	Lys	Asn	Ala	Leu	Arg	Asp
	130					135					140				
Thr	Ile	Trp	Leu	Arg	Thr	Ile	Gly	Pro	Glu	Tyr	Ile	Glu	Lys	Ala	Phe
145					150				155						160
Arg	Trp	Ala	His	Ala	Ala	Asp	Pro	Gln	Ala	Arg	Leu	Phe	Tyr	Asn	Asp
			165						170					175	
Tyr	Gly	Gly	Glu	Glu	Val	Gly	Gly	Lys	Ser	Glu	Ala	Ile	Tyr	Gly	Met
		180					185						190		
Leu	Lys	Asp	Leu	Leu	Gln	Gln	Gly	Val	Pro	Ile	His	Gly	Val	Gly	Leu
	195						200					205			
Gln	Met	His	Val	Ser	Ile	Lys	Asn	Pro	Pro	Asn	Pro	Glu	Lys	Val	Ala
	210					215					220				
Ala	Asn	Ile	Lys	Arg	Leu	Asn	Asp	Leu	Gly	Leu	Glu	Val	His	Ile	Thr
225					230				235						240
Glu	Met	Asp	Val	Lys	Thr	Trp	Asp	Gly	Ile	Gly	Thr	Lys	Gln	Gln	Arg
			245					250						255	
Leu	Ala	Ala	Gln	Ala	Gln	Val	Tyr	Arg	Asn	Met	Met	Gln	Val	Cys	Leu
		260					265						270		
Glu	Ala	Glu	Asn	Cys	Lys	Ala	Phe	Ser	Leu	Trp	Gly	Val	Ser	Asp	Arg
	275						280					285			
Tyr	Ser	Trp	Ile	Pro	Arg	Ile	Phe	Lys	Lys	Pro	Asp	Ala	Pro	Leu	Ile
	290					295					300				
Phe	Asp	Asp	Leu	Gly	Arg	Pro	Lys	Pro	Ala	Tyr	Asn	Ala	Leu	Lys	Glu
305					310				315						320
Val	Leu	Lys	Arg	Arg											

325

<210> 27
 <211> 1173
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 27
 atgaaatcct taacaaatca atccttcatg aaactcataa tctgtctggc attgccagtc 60
 gcactactca gcatttcatg caaaaaaccc gccgaaccac tgaaccggg tgaaggctta 120
 aaagacagct tcaaagacaa gtttctcatg ggtgtggcgc tgaataaagc acagattctg 180
 ggaagagata cattggtaca tgcttttaca gtacagcatt ttaattccat tactgcagaa 240
 aacgaaatga agtgggaacg catccacccg cagcctgatg tatatgattt cacgggttccg 300
 gacagcctga ttgcttttgg cgaacgcaac ggcattgtta tagtcgggca tacactcgt 360
 tggcactccc aggtgcccga ttgggttttc accgatgaga agggaaagcc tctgaccgcg 420
 gatgctctgc tccaacgcat gaaggatcat atttatgccg ttgtcggccg gtataagggc 480
 aaggtggatg gctgggatgt ggtaaatgaa gcattggatg aagacggaca gctgcgcaaa 540
 tccaggtggc atgaaatcat cggtgatgat tacattcaga aagcctttga gttcacccgg 600
 gaggcagatc ccggtgcaga gctttattac aatgattaca acatagaact caaaaaaaag 660
 cgggagggtg ctgtcaggct gctacaggaa ctgcagcaaa aaggcattaa aatcgacgga 720
 gtgggcattc agggacattg gcacctgcac tcacctgatc tgcaagagat tgattcaagt 780
 cttcaggcat acggacaact tggcttgaag gtcattgatc ccgaactgga tggttaacgtc 840
 attcccgaac cttcaggatg tattggcgcc gatgttgcac agcgggaggga ttatcagagc 900
 cagctgaatc catggcctga aagttttccc gattccatgc agcagggttct ggccagccgg 960
 tatgccgaac tggtcggatt gttcctgaag cacagcgata aggtaagccg ggtgaccttc 1020
 tggggaattc acgatggcta ttcctggaag aacaactggc caataccggg ccgaacaact 1080
 tatcccctcc tttttgaccg gaattaccag cctaaacctg cgtatgatgc tgtcattgaa 1140
 ttgacaaaaa tacagccgga agccagtaac tga 1173

<210> 28
 <211> 390
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(27)

<400> 28
 Met Lys Ser Leu Thr Asn Gln Ser Phe Met Lys Leu Ile Ile Cys Leu
 1 5 10 15
 Ala Leu Pro Val Ala Leu Leu Ser Ile Ser Cys Lys Lys Pro Ala Glu
 20 25 30
 Pro Leu Lys Pro Val Glu Gly Leu Lys Asp Ser Phe Lys Asp Lys Phe
 35 40 45
 Leu Met Gly Val Ala Leu Asn Lys Ala Gln Ile Leu Gly Arg Asp Thr
 50 55 60
 Leu Val His Ala Phe Thr Val Gln His Phe Asn Ser Ile Thr Ala Glu
 65 70 75 80
 Asn Glu Met Lys Trp Glu Arg Ile His Pro Gln Pro Asp Val Tyr Asp
 85 90 95
 Phe Thr Val Pro Asp Ser Leu Ile Ala Phe Gly Glu Arg Asn Gly Met
 100 105 110
 Phe Ile Val Gly His Thr Leu Val Trp His Ser Gln Val Pro Asp Trp
 115 120 125
 Val Phe Thr Asp Glu Lys Gly Lys Pro Leu Thr Arg Asp Ala Leu Leu
 130 135 140
 Gln Arg Met Lys Asp His Ile Tyr Ala Val Val Gly Arg Tyr Lys Gly
 145 150 155 160
 Lys Val Asp Gly Trp Asp Val Val Asn Glu Ala Leu Asp Glu Asp Gly
 165 170 175
 Gln Leu Arg Lys Ser Arg Trp His Glu Ile Ile Gly Asp Asp Tyr Ile
 180 185 190
 Gln Lys Ala Phe Glu Phe Thr Arg Glu Ala Asp Pro Gly Ala Glu Leu

<400>	29					
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gctactgtac	catctgggtca	gtggggtacag	ctctctggaa	cgtacacgat	cccggccgga	120
gttaccgtgg	aagatctcac	gctttacttc	gaatctcaaa	atccaaccct	tgagtcttac	180
gtggatgacg	tgaagatagt	ggatacaact	tccgcagaga	taaaagattga	aatggaacct	240
gaaaaagaga	tacctgtctc	gaaagaagta	ctgaaagatt	acttcaaagt	cggagttgca	300
ctgccgtcca	aggtcttcct	caaccCGaag	gacatagaac	tcatacagaa	acacttcaac	360
agcatcacgc	cagaaaaacga	gatgaaaccg	gatagtctgc	tcgcgggcac	cgaaaaacggt	420
aagctgaagt	tcaggtttga	aacagcagac	aaatacattc	agttcgtcga	ggaaaaacggc	480
atggtttataa	gaggtcacac	actggtgtgg	cacaaccaga	caccgcactg	gttcttcaaa	540
gacgaaaacg	gaaacctcct	ctccaaagaa	gcgatgacgg	aaagactcaa	agagtacatc	600
cacaccgttg	tcggacactt	caaaggaaaa	gtctacgcat	gggacgtggt	gaacgaagcg	660
gtcgtatccga	accagccgga	tggacttgaga	agatcaacct	gggtaccagat	catggggcctt	720
gactacatag	aactcgcctt	caagttcgca	agagaggcag	atccagatgc	aaaactcttc	780
tacaacgact	acaacacatt	cgatcccaga	aagagagaca	tcatactaaa	cctcgtgaag	840
gatctcaaag	agaagggact	catcgatggc	ataggaatgc	agtgtcacat	cagtcttgca	900
acagacatca	aacagatcga	agaggccatc	aaaaagttca	gcaccatacc	cggtatagaa	960
attcacatca	cagaactcga	tatgagtgtc	tacagagatt	ccagttccaa	ctaccagag	1020
gcaccgagga	cggcactcat	cgaacaggct	cacaaaatga	tgcagctctt	tgagatcttc	1080
aagaagcaca	gcaacgtgat	cacgaacgtc	acattctggg	gtctcaagga	cgattactcc	1140
tggagagcaa	caagaagaaa	cgactggccg	ctcatcttcg	acaaagatca	ccaggcgaaa	1200
ctcgcttact	ggggcagatgt	ggcaccctgag	gtcctttccac	cacttccaaa	agaaagcagg	1260
atctccgaag	gcgaagcagt	ggtagtgggg	atgatggacg	actcgtacct	gatgtcgaag	1320
ccgatagaga	tccttgacga	agaaggggaa	gtgaaggcaa	cgatcagggc	agtgtgaaaa	1380
gacagcacga	tctacatcta	cggagaggta	caggacaaga	caaagaaacc	agcagaagac	1440
ggagtggcca	tattcatcaa	cccgaacaac	gaaagaacac	cctatctgca	gcctgatgac	1500
acctacgttg	tgtctgtggac	gaacttggaa	acggagggtca	acagagaaga	cgtacaggtg	1560
agaaatctcg	ttgggccttg	ctttagaaga	tacagcttcg	agatgtcgat	cacgataccg	1620
ggtgtggagt	tcaagaaaga	cagctacata	ggatttgacg	ttgcggtgat	agacgacggg	1680
aagtgggtaca	gctggagcga	cacgacgaac	agccagaaga	cgaacacgat	gaactacgga	1740
acgctgaagc	tcgaaggaat	aatggtagcg	acagcaaaat	acggaacacc	ggtcatcgat	1800
ggagagactc	atgagatctg	gaacacgaca	gaggagatag	agacgaaaac	ggtggctatg	1860
ggatcgcttg	acaagaatcg	gacagcgaaa	gtgagggtgc	tgtggggacga	gaactacctg	1920
tacgtacttg	cgatcgtgaa	agagcccgtt	ctgaacaaag	acaacagcaa	cccgtggggag	1980
caggattccg	tggagatctt	cgtggatgag	aacaaccaca	agacaggata	ctacgaagac	2040
gacgacgcgc	agttcagggt	gaactacatg	aacgagcaga	ccttttgaac	gggaggaagt	2100
ccagcgaggt	tcaagacagc	ggtgaagctg	atcgaaggag	gatacatagt	tgaggcgagcg	2160
ctcaagtggga	agacgatcaa	gccaaacccg	aacacaggtg	taggattcaa	catccagggtg	2220

aacgatgcga acgagaaagg gcagaggggtc ggtatcatct cctggagcga tcccacaaac 2280
 aacagctggc aagatccttc aaagttcggg aacctcagac tcatcaagtg a 2331

<210> 30
 <211> 776
 <212> PRT
 <213> Archaea

<400> 30
 Met Thr Met Gln Arg Lys Tyr Ser Ser Asp Ala Asn Thr Gln Tyr Glu
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 Trp Ile Lys Ser Ala Thr Val Pro Ser Gly Gln Trp Val Gln Leu Ser
 20 25 30
 Gly Thr Tyr Thr Ile Pro Ala Gly Val Thr Val Glu Asp Leu Thr Leu
 35 40 45
 Tyr Phe Glu Ser Gln Asn Pro Thr Leu Glu Phe Tyr Val Asp Asp Val
 50 55 60
 Lys Ile Val Asp Thr Thr Ser Ala Glu Ile Lys Ile Glu Met Glu Pro
 65 70 75 80
 Glu Lys Glu Ile Pro Ala Leu Lys Glu Val Leu Lys Asp Tyr Phe Lys
 85 90 95
 Val Gly Val Ala Leu Pro Ser Lys Val Phe Leu Asn Pro Lys Asp Ile
 100 105 110
 Glu Leu Ile Thr Lys His Phe Asn Ser Ile Thr Ala Glu Asn Glu Met
 115 120 125
 Lys Pro Asp Ser Leu Leu Ala Gly Ile Glu Asn Gly Lys Leu Lys Phe
 130 135 140
 Arg Phe Glu Thr Ala Asp Lys Tyr Ile Gln Phe Val Glu Glu Asn Gly
 145 150 155 160
 Met Val Ile Arg Gly His Thr Leu Val Trp His Asn Gln Thr Pro Asp
 165 170 175
 Trp Phe Phe Lys Asp Glu Asn Gly Asn Leu Leu Ser Lys Glu Ala Met
 180 185 190
 Thr Glu Arg Leu Lys Glu Tyr Ile His Thr Val Val Gly His Phe Lys
 195 200 205
 Gly Lys Val Tyr Ala Trp Asp Val Val Asn Glu Ala Val Asp Pro Asn
 210 215 220
 Gln Pro Asp Gly Leu Arg Arg Ser Thr Trp Tyr Gln Ile Met Gly Pro
 225 230 235 240
 Asp Tyr Ile Glu Leu Ala Phe Lys Phe Ala Arg Glu Ala Asp Pro Asp
 245 250 255
 Ala Lys Leu Phe Tyr Asn Asp Tyr Asn Thr Phe Asp Pro Arg Lys Arg
 260 265 270
 Asp Ile Ile Tyr Asn Leu Val Lys Asp Leu Lys Glu Lys Gly Leu Ile
 275 280 285
 Asp Gly Ile Gly Met Gln Cys His Ile Ser Leu Ala Thr Asp Ile Lys
 290 295 300
 Gln Ile Glu Glu Ala Ile Lys Lys Phe Ser Thr Ile Pro Gly Ile Glu
 305 310 315 320
 Ile His Ile Thr Glu Leu Asp Met Ser Val Tyr Arg Asp Ser Ser Ser
 325 330 335
 Asn Tyr Pro Glu Ala Pro Arg Thr Ala Leu Ile Glu Gln Ala His Lys
 340 345 350
 Met Met Gln Leu Phe Glu Ile Phe Lys Lys His Ser Asn Val Ile Thr
 355 360 365
 Asn Val Thr Phe Trp Gly Leu Lys Asp Asp Tyr Ser Trp Arg Ala Thr
 370 375 380
 Arg Arg Asn Asp Trp Pro Leu Ile Phe Asp Lys Asp His Gln Ala Lys
 385 390 395 400
 Leu Ala Tyr Trp Ala Ile Val Ala Pro Glu Val Leu Pro Pro Leu Pro
 405 410 415
 Lys Glu Ser Arg Ile Ser Glu Gly Glu Ala Val Val Val Gly Met Met
 420 425 430
 Asp Asp Ser Tyr Leu Met Ser Lys Pro Ile Glu Ile Leu Asp Glu Glu
 435 440 445
 Gly Asn Val Lys Ala Thr Ile Arg Ala Val Trp Lys Asp Ser Thr Ile
 450 455 460
 Tyr Ile Tyr Gly Glu Val Gln Asp Lys Thr Lys Lys Pro Ala Glu Asp
 465 470 475 480

Gly Val Ala Ile Phe Ile Asn Pro Asn Asn Glu Arg Thr Pro Tyr Leu
 485 490 495
 Gln Pro Asp Asp Thr Tyr Val Val Leu Trp Thr Asn Trp Lys Thr Glu
 500 505 510
 Val Asn Arg Glu Asp Val Gln Val Lys Lys Phe Val Gly Pro Gly Phe
 515 520 525
 Arg Arg Tyr Ser Phe Glu Met Ser Ile Thr Ile Pro Gly Val Glu Phe
 530 535 540
 Lys Lys Asp Ser Tyr Ile Gly Phe Asp Val Ala Val Ile Asp Asp Gly
 545 550 555 560
 Lys Trp Tyr Ser Trp Ser Asp Thr Thr Asn Ser Gln Lys Thr Asn Thr
 565 570 575
 Met Asn Tyr Gly Thr Leu Lys Leu Glu Gly Ile Met Val Ala Thr Ala
 580 585 590
 Lys Tyr Gly Thr Pro Val Ile Asp Gly Glu Ile Asp Glu Ile Trp Asn
 595 600 605
 Thr Thr Glu Glu Ile Glu Thr Lys Ala Val Ala Met Gly Ser Leu Asp
 610 615 620
 Lys Asn Ala Thr Ala Lys Val Arg Val Leu Trp Asp Glu Asn Tyr Leu
 625 630 635 640
 Tyr Val Leu Ala Ile Val Lys Glu Pro Val Leu Asn Lys Asp Asn Ser
 645 650 655
 Asn Pro Trp Glu Gln Asp Ser Val Glu Ile Phe Val Asp Glu Asn Asn
 660 665 670
 His Lys Thr Gly Tyr Tyr Glu Asp Asp Ala Gln Phe Arg Val Asn
 675 680 685
 Tyr Met Asn Glu Gln Thr Phe Gly Thr Gly Gly Ser Pro Ala Arg Phe
 690 695 700
 Lys Thr Ala Val Lys Leu Ile Glu Gly Gly Tyr Ile Val Glu Ala Ala
 705 710 715 720
 Ile Lys Trp Lys Thr Ile Lys Pro Thr Pro Asn Thr Val Ile Gly Phe
 725 730 735
 Asn Ile Gln Val Asn Asp Ala Asn Glu Lys Gly Gln Arg Val Gly Ile
 740 745 750
 Ile Ser Trp Ser Asp Pro Thr Asn Ser Trp Gln Asp Pro Ser Lys
 755 760 765
 Phe Gly Asn Leu Arg Leu Ile Lys
 770 775

<210> 31
 <211> 1134
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 31
 gtggaacccg tcggagcacc ggagctgagc tatgaaatcc ggaatttccg ggtggtggca 60
 ccggacggag tgccggatat acagcccaca gccgcaccgg aagcgcaggc tgttccggaa 120
 ggggagatgc cttccctgaa ggatgtatac gcggggcaaat tcgacttcgg tacggcgctg 180
 ccccggaatg cattcaatga tatccagctg ctgagactgg tgaaggacca gttcaacatc 240
 ctgacaccgg aaaatgagat gaaaccggat gcaatcctgg atgtgtacgg cagcaaaaaa 300
 ctggcggaaa aggacgagac agcgggtggct gtccggtttg aagcatgcaa gacgctgctt 360
 cggttcgcac agtccaacgg cctgaagggtg cacggccata cgctgctgtg gcacaaccag 420
 accccggaag ccctttttcca cgaagggttat gacaccacca agccgatggc cggccgggaa 480
 gtgatgtttg gccggatgga gaattacatc cgcgaagtgc tgacctggac cgaagaaaat 540
 tatccggggc tgatcgtttc ctgggacgtg gtgaatgaag caatcgacga cggaaacgaac 600
 cagctgcgca ccggtgccaa ctggtataag acggtcggac cggactacct ggcacgcgcg 660
 ttggaatatg cccggaaata cgcggcggaa ggcgtgctgc tgtactacaa cgattacaat 720
 accgcatacg gcggtaaagt gtatgggatt gtggatctgc tggagagcct gattgccgag 780
 ggcaatatgg acggatacgg attccagatg caccacagcc tgggagaacc ttccatggat 840
 atgattaccc gggcagtaga gaaaatagcc tcgctgggac tccggctgcg tgtgagcgaa 900
 ctggacatca acgcccggca ggcgacagag aaaaatttcg aagcccagaa gaacaagtac 960
 aaacaggtga tgaagctgat gctccggttc aaggaccaga ctgaagcggg ccagggtgtg 1020
 ggcgtgacgg acatcatgag ctggcgcagg gacggatatc cgctgctgtt tgacaagaac 1080
 atgaatccga aaccgcggtt cttcgggtgtg atcgaagccg gaatggaaga ctga 1134

<210> 32

<211> 377
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 32
 Val Glu Thr Val Gly Ala Pro Glu Leu Ser Tyr Glu Ile Arg Asn Phe
 1 5 10 15
 Arg Val Val Ala Pro Asp Gly Val Pro Asp Ile Gln Pro Thr Ala Ala
 20 25 30
 Pro Glu Ala Gln Ala Val Pro Glu Gly Glu Met Pro Ser Leu Lys Asp
 35 40 45
 Val Tyr Ala Gly Lys Phe Asp Phe Gly Thr Ala Leu Pro Arg Asn Ala
 50 55 60
 Phe Asn Asp Ile Gln Leu Arg Leu Val Lys Asp Gln Phe Asn Ile
 65 70 75 80
 Leu Thr Pro Glu Asn Glu Met Lys Pro Asp Ala Ile Leu Asp Val Tyr
 85 90 95
 Gly Ser Lys Lys Leu Ala Glu Lys Asp Glu Thr Ala Val Ala Val Arg
 100 105 110
 Phe Glu Ala Cys Lys Thr Leu Leu Arg Phe Ala Gln Ser Asn Gly Leu
 115 120 125
 Lys Val His Gly His Thr Leu Leu Trp His Asn Gln Thr Pro Glu Ala
 130 135 140
 Leu Phe His Glu Gly Tyr Asp Thr Thr Lys Pro Met Ala Gly Arg Glu
 145 150 155 160
 Val Met Leu Gly Arg Met Glu Asn Tyr Ile Arg Glu Val Leu Thr Trp
 165 170 175
 Thr Glu Glu Asn Tyr Pro Gly Val Ile Val Ser Trp Asp Val Val Asn
 180 185 190
 Glu Ala Ile Asp Asp Gly Thr Asn Gln Leu Arg Thr Gly Ala Asn Trp
 195 200 205
 Tyr Lys Thr Val Gly Pro Asp Tyr Leu Ala Arg Ala Phe Glu Tyr Ala
 210 215 220
 Arg Lys Tyr Ala Ala Glu Gly Val Leu Leu Tyr Tyr Asn Asp Tyr Asn
 225 230 235 240
 Thr Ala Tyr Gly Gly Lys Leu Tyr Gly Ile Val Asp Leu Leu Glu Ser
 245 250 255
 Leu Ile Ala Glu Gly Asn Ile Asp Gly Tyr Gly Phe Gln Met His His
 260 265 270
 Ser Leu Gly Glu Pro Ser Met Asp Met Ile Thr Arg Ala Val Glu Lys
 275 280 285
 Ile Ala Ser Leu Gly Leu Arg Leu Arg Val Ser Glu Leu Asp Ile Asn
 290 295 300
 Ala Gly Lys Ala Thr Glu Lys Asn Phe Glu Ala Gln Lys Asn Lys Tyr
 305 310 315 320
 Lys Gln Val Met Lys Leu Met Leu Arg Phe Lys Asp Gln Thr Glu Ala
 325 330 335
 Val Gln Val Trp Gly Val Thr Asp Ile Met Ser Trp Arg Arg Asp Gly
 340 345 350
 Tyr Pro Leu Leu Phe Asp Lys Asn Met Asn Pro Lys Pro Ala Phe Phe
 355 360 365
 Gly Val Ile Glu Ala Gly Met Glu Asp
 370 375

<210> 33
 <211> 1815
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 33
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 acttccgctc aggacgcgga attttccctg cgcggttttag ccgagcgcaa taacttttat 120
 gttggagcag ccgtttatac cactcatctg aatgatcctg tccatgttga aacactggca 180

cgagaattca	atatgtcac	gcctgaacag	caggccaaac	attgtgagtt	ggaggcacag	240
caagggtcaat	ttgactttcg	gagtttcgat	cgtttagtcg	ccttcgccga	agaacacaac	300
atggcgatac	acgggtcatgc	gctgggtctgg	catagctgca	caccgcaatg	ggtggctaac	360
ggcgagtaca	cccgtagcga	agccattgggt	ctgctgcgcg	actcgattat	gaccattgtt	420
ggccgttaca	aaggccgtat	tccgatttgg	gacgtcgtca	atgaaggcat	tgctgacagc	480
ggcggaaacac	tgcgcgatac	gccatggcgg	cagttaattg	gcgatgatta	catcgaactt	540
gccttccagt	tcgctcatga	agccgacccg	gatgcgctgc	tgttttacaa	cgactataat	600
acggaaggca	tgaaccctaa	atcggacgcc	atgtacgaga	tggtgagcga	ttttgtggcg	660
cgtggaattc	cgattcacgg	ggttgggctg	caatcccatt	tcattattagg	cagttttgac	720
ccagaccaga	ttgctcggaa	cgctcgcgcg	cttggcgaac	tcggttttaca	agttcaattc	780
accgaggtcg	atattcgata	ttccggcgag	gcgacagata	atatcctcca	gcggcaggcg	840
ggcgattacc	atcgccctgat	ggacgtttgc	ctcggtaacg	acgcctgtac	tgcgtttatc	900
acctggggcg	tgaccgataa	atatacctgg	ttgcggggcg	cgaacctggg	cttctacaac	960
aacctatcgg	ttgaaccgct	gctttttgac	gatgactatg	aaccaagcc	cgcttatttt	1020
gcggtgctgg	actcactagc	gcgaagagcg	ggcgaaaccc	ccgttttgag	cgatgacgag	1080
cttgcggcga	tgatcggcgg	cacagtccaa	acggtcgaaa	ttcccccgcc	gacgaaaagc	1140
aatctcagtc	aggaagcgcc	ggacgccggt	cctgggtgtga	tctattacgc	cgccctacccc	1200
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cacgacccgg	ctactgcctg	gtatcaggag	gactcggttg	agttttacct	gaacacgaca	1440
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catctcaatg	gctcacgcac	accggatgcc	gaccgagaca	ccaagttgat	ctggtcgcga	1740
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<210> 34
 <211> 604
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(23)

<400> 34

Met	Val	Arg	Lys	Lys	Leu	Phe	Tyr	Ile	Val	Ala	Leu	Met	Leu	Met	Phe
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Gly	Ala	Ser	Phe	Thr	Ser	Ala	Gln	Asp	Ala	Glu	Phe	Ser	Leu	Arg	Gly
			20					25					30		
Leu	Ala	Glu	Arg	Asn	Asn	Phe	Tyr	Val	Gly	Ala	Ala	Val	Tyr	Thr	Thr
			35				40					45			
His	Leu	Asn	Asp	Pro	Val	His	Val	Glu	Thr	Leu	Ala	Arg	Glu	Phe	Asn
	50					55					60				
Met	Leu	Thr	Pro	Glu	Gln	Gln	Ala	Lys	His	Cys	Glu	Leu	Glu	Ala	Gln
65				70						75				80	
Gln	Gly	Gln	Phe	Asp	Phe	Arg	Ser	Phe	Asp	Arg	Leu	Val	Ala	Phe	Ala
			85						90					95	
Glu	Glu	His	Asn	Met	Ala	Ile	His	Gly	His	Ala	Leu	Val	Trp	His	Ser
			100					105					110		
Cys	Thr	Pro	Gln	Trp	Val	Ala	Asn	Gly	Glu	Tyr	Thr	Arg	Asp	Glu	Ala
		115					120					125			
Ile	Gly	Leu	Leu	Arg	Asp	Ser	Ile	Met	Thr	Ile	Val	Gly	Arg	Tyr	Lys
	130					135					140				
Gly	Arg	Ile	Pro	Ile	Trp	Asp	Val	Val	Asn	Glu	Gly	Ile	Ala	Asp	Ser
145				150					155					160	
Gly	Gly	Thr	Leu	Arg	Asp	Thr	Pro	Trp	Arg	Gln	Leu	Ile	Gly	Asp	Asp
			165					170					175		
Tyr	Ile	Glu	Leu	Ala	Phe	Gln	Phe	Ala	His	Glu	Ala	Asp	Pro	Asp	Ala
			180				185						190		
Leu	Leu	Phe	Tyr	Asn	Asp	Tyr	Asn	Thr	Glu	Gly	Met	Asn	Pro	Lys	Ser
	195						200					205			
Asp	Ala	Met	Tyr	Glu	Met	Val	Ser	Asp	Phe	Val	Ala	Arg	Gly	Ile	Pro
	210					215					220				

Ile His Gly Val Gly Leu Gln Ser His Phe Ile Leu Gly Ser Phe Asp
 225 230 235 240
 Pro Asp Gln Ile Ala Arg Asn Val Ala Arg Leu Gly Glu Leu Gly Leu
 245 250 255
 Gln Val Gln Phe Thr Glu Val Asp Ile Arg Tyr Ser Gly Glu Ala Thr
 260 265 270
 Asp Asn Ile Leu Gln Arg Gln Ala Gly Asp Tyr His Arg Leu Met Asp
 275 280 285
 Val Cys Leu Gly Asn Asp Ala Cys Thr Ala Phe Ile Thr Trp Gly Val
 290 295 300
 Thr Asp Lys Tyr Thr Trp Leu Arg Gly Ala Asn Leu Gly Phe Tyr Asn
 305 310 315 320
 Asn Leu Ser Val Glu Pro Leu Leu Phe Asp Asp Tyr Glu Pro Lys
 325 330 335
 Pro Ala Tyr Phe Ala Val Leu Asp Ser Leu Ala Arg Arg Ala Gly Glu
 340 345 350
 Thr Pro Val Leu Ser Asp Asp Glu Leu Ala Ala Met Ile Gly Gly Thr
 355 360 365
 Val Gln Thr Val Glu Ile Pro Pro Pro Thr Lys Ser Asn Leu Ser Gln
 370 375 380
 Glu Ala Pro Asp Ala Val Pro Gly Val Ile Tyr Tyr Ala Ala Tyr Pro
 385 390 395 400
 Ile Ser Ile Thr Val Asp Gly Glu Ala Asn Asp Trp Glu Arg Ile Pro
 405 410 415
 Arg Gly Met Ile Asp Ser Gly Pro Thr Val Pro Gln Asp Asn Asp Thr
 420 425 430
 Thr Met Thr Phe Ala Ala Ala Ala Asp Lys Thr Asn Leu Tyr Phe Leu
 435 440 445
 Ala Glu Val Thr Asp Ser Gln Val Ser Tyr Gly Thr His Asp Pro Ala
 450 455 460
 Thr Ala Trp Tyr Gln Glu Asp Ser Val Glu Phe Tyr Leu Asn Thr Thr
 465 470 475 480
 Gly Asp Leu Thr Asn Thr Ala Tyr Gln Pro Gly Val Ala Gln Ile Gly
 485 490 495
 Ile Met Ala Ala Asn Ile Asp Asn Asp Asn Pro Gly Ala Pro Ile Ile
 500 505 510
 Gly Gly Gly Asn Ser Asp Ile Ser Gln Val Lys Ala Ile Val Val Lys
 515 520 525
 Thr Asp Thr Gly Tyr Leu Val Glu Ala Ser Val Pro Leu Met Thr Asp
 530 535 540
 Val Trp Thr Ile Glu Pro Lys Gln Gly Ala Val Leu Gly Phe Gln Val
 545 550 555 560
 His Leu Asn Gly Ser Arg Thr Pro Asp Ala Asp Arg Asp Thr Lys Leu
 565 570 575
 Ile Trp Ser Leu Leu Asp Thr Leu Asp Gln Ser Tyr Ser Asn Pro Ser
 580 585 590
 Leu Phe Gly Arg Leu Ile Phe Trp Asn Ile Asn Leu
 595 600

<210> 35

<211> 2286

<212> DNA

<213> Unknown

<220>

<223> obtained from an environmental sample

<400> 35

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acccttgagt	tctacgtgga	tgacgtgaag	atagtggata	caacttccgc	agagataaag	180
attgaaatgg	aacctgaaaa	agagatacct	gctctgaaag	aagtactgaa	agattacttc	240
aaagtccgag	ttgcactgcc	gtccaagggtc	ttcctcaacc	cgaaggacat	agaactcatc	300
acgaaacact	tcaacagcat	caccgcagaa	aacgagatga	aaccggatag	tctgctcgcg	360
ggcatcgaaa	acggtaagct	gaagttcagg	tttgaaacag	cagacaaata	cattcagttc	420
gtcggaggaaa	acggcatggt	tataagaggt	cacacactgg	tgtggcacia	ccagacaccc	480
gactggttct	tcaaagacga	aaacggaaac	ctcctctcca	aagaagcgat	gacggaaaga	540
ctcaaagagt	acatccacac	cgttgtcggg	cacttcaaag	gaaaagtcta	cgcatgggac	600
gtggtgaacg	aagcggtcga	tccgaaccag	ccggatggac	tgagaagatc	aacctggtac	660

cagatcatgg	ggcctgacta	catagaactc	gccttcaagt	tcgcaagaga	ggcagatcca	720
gatgcaaaac	tcttctacaa	cgactacaac	acattcgcgc	ccagaaaagag	agacatcatc	780
tacaacctcg	tgaaggatct	caaagagaag	ggactcatcg	atggcatagg	aatgcagtgt	840
cacatcagtc	ttgcaacaga	catcaaacag	atcgaagagg	ccatcaaaaa	gttcagcacc	900
ataccgggta	tagaaattca	catcacagaa	ctcgatatga	gtgtctacag	agattccagt	960
tccaactacc	cagaggcacc	gaggacggca	ctcatcgaac	aggctcaca	aatgatgcag	1020
ctctttgaga	tcttcaagaa	gcacagcaac	gtgatcacga	acgtcacatt	ctgggggtctc	1080
aaggacgatt	actcctggag	agcaacaaga	agaaacgact	ggccgctcat	cttcgacaaa	1140
gatcaccagg	cgaaactcgc	ttactgggcg	atagtggcac	ctgaggctct	tccaccactt	1200
ccaaaagaaa	gcaggatctc	cgaaggcgaa	gcagtggtag	tggggatgat	ggacgactcg	1260
tacctgatgt	cgaagccgat	agagatcctt	gacgaagaag	ggaacgtgaa	ggcaacgatc	1320
agggcagtg	ggaaagacag	cacgatctac	atctacggag	aggtacagga	caagacaaag	1380
aaacagcag	aagacggagt	ggccatatct	atcaaccgga	acaacgaaag	aacaccctat	1440
ctgcagcctg	atgacaccta	cgttgtgctg	tggacgaact	ggaagacgga	ggtcaacaga	1500
gaagacgtac	aggtgaagaa	attcggtggg	cctggcttta	gaagatacag	cttcgagatg	1560
tcgatcacga	taccgggtgt	ggagttcaag	aaagacagct	acataggatt	tgacgttgcg	1620
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atagttgagg	cagcgatcaa	gtggaagacg	atcaagccaa	caccgaacac	agtgatagga	2160
ttcaacatcc	aggtgaacga	tgcgaacgag	aaagggcaga	gggtcggtat	catctcctgg	2220
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aagtga						2286

<210> 36
 <211> 761
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 36
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 Lys Ser Trp Ser Arg Ala Cys Arg Ser Thr Leu Val Asp Leu Thr
 20 25 30
 Leu Tyr Phe Glu Ser Gln Asn Pro Thr Leu Glu Phe Tyr Val Asp Asp
 35 40 45
 Val Lys Ile Val Asp Thr Thr Ser Ala Glu Ile Lys Ile Glu Met Glu
 50 55 60
 Pro Glu Lys Glu Ile Pro Ala Leu Lys Glu Val Leu Lys Asp Tyr Phe
 65 70 75 80
 Lys Val Gly Val Ala Leu Pro Ser Lys Val Phe Leu Asn Pro Lys Asp
 85 90 95
 Ile Glu Leu Ile Thr Lys His Phe Asn Ser Ile Thr Ala Glu Asn Glu
 100 105 110
 Met Lys Pro Asp Ser Leu Leu Ala Gly Ile Glu Asn Gly Lys Leu Lys
 115 120 125
 Phe Arg Phe Glu Thr Ala Asp Lys Tyr Ile Gln Phe Val Glu Glu Asn
 130 135 140
 Gly Met Val Ile Arg Gly His Thr Leu Val Trp His Asn Gln Thr Pro
 145 150 155 160
 Asp Trp Phe Phe Lys Asp Glu Asn Gly Asn Leu Leu Ser Lys Glu Ala
 165 170 175
 Met Thr Glu Arg Leu Lys Glu Tyr Ile His Thr Val Val Gly His Phe
 180 185 190
 Lys Gly Lys Val Tyr Ala Trp Asp Val Val Asn Glu Ala Val Asp Pro
 195 200 205
 Asn Gln Pro Asp Gly Leu Arg Arg Ser Thr Trp Tyr Gln Ile Met Gly
 210 215 220
 Pro Asp Tyr Ile Glu Leu Ala Phe Lys Phe Ala Arg Glu Ala Asp Pro
 225 230 235 240
 Asp Ala Lys Leu Phe Tyr Asn Asp Tyr Asn Thr Phe Asp Pro Arg Lys

Arg Asp Ile Ile 245 Tyr Asn Leu Val Lys 250 Asp Leu Lys Glu Lys 255 Gly Leu
 Ile Asp Gly 260 Ile Gly Met Gln Cys 265 His Ile Ser Leu Ala Thr Asp Ile
 Lys Gln 275 Ile Glu Glu Ala Ile 280 Lys Phe Ser Thr Ile Pro Gly Ile
 Glu 290 Ile His Ile Thr Glu 295 Leu Asp Met Ser Val 300 Tyr Arg Asp Ser Ser
 305 Ser Asn Tyr Pro Glu 310 Ala Pro Arg Thr Ala 315 Leu Ile Glu Gln Ala His
 Lys Met Met Gln 325 Leu Phe Glu Ile Phe 330 Lys Lys His Ser Asn Val Ile
 Thr Asn Val 340 Thr Phe Trp Gly Leu 345 Lys Asp Asp Tyr Ser Trp Arg Ala
 Thr Arg 355 Arg Asn Asp Trp Pro Leu Ile Phe Asp Lys 365 Asp His Gln Ala
 Lys 370 Leu Ala Tyr Trp Ala 375 Ile Val Ala Pro Glu 380 Val Leu Pro Pro Leu
 385 Pro Lys Glu Ser Arg 390 Ile Ser Glu Gly Glu Ala Val Val Val Gly Met
 Met Asp Asp Ser Tyr Leu Met Ser Lys 405 Pro Ile Glu Ile Leu Asp Glu
 Glu Gly Asn Val 420 Lys Ala Thr Ile 425 Arg Ala Val Trp Lys Asp Ser Thr
 Ile Tyr 435 Ile Tyr Gly Glu Val 440 Gln Asp Lys Thr Lys 445 Lys Pro Ala Glu
 Asp Gly Val Ala Ile Phe 455 Ile Asn Pro Asn Asn Glu Arg Thr Pro Tyr
 465 Leu Gln Pro Asp Asp Thr Tyr Val Val Leu Trp Thr Asn Trp Lys Thr
 Glu Val Asn Arg 485 Glu Asp Val Gln Val 490 Lys Lys Phe Val Gly Pro Gly
 Phe Arg Arg 500 Tyr Ser Phe Glu Met Ser Ile Thr Ile Pro Gly Val Glu
 Phe Lys 515 Lys Asp Ser Tyr Ile Gly Phe Asp Val Ala Val Ile Asp Asp
 Gly 530 Lys Trp Tyr Ser Trp Ser Asp Thr Thr Asn Ser Gln Lys Thr Asn
 545 Thr Met Asn Tyr Gly 550 Thr Leu Lys Leu Glu Gly Ile Met Val Ala Thr
 Ala Lys Tyr Gly 565 Thr Pro Val Ile Asp 570 Gly Glu Ile Asp Glu Ile Trp
 Asn Thr Thr Glu Glu Ile Glu Thr 585 Lys Ala Val Ala Met Gly Ser Leu
 Asp Lys 595 Asn Ala Thr Ala Lys 600 Val Arg Val Leu Trp Asp Glu Asn Tyr
 Leu Tyr Val Leu Ala Ile Val Lys Asp Pro Val Leu Asn Lys Asp Asn
 625 Ser Asn Pro Trp Glu 630 Gln Asp Ser Val Glu Ile Phe Val Asp Glu Asn
 Asn His Lys Thr Gly Tyr Tyr Glu Asp 645 Asp Asp Ala Gln Phe Arg Val
 Asn Tyr Met 660 Asn Glu Gln Thr Phe 665 Gly Thr Gly Gly Ser Pro Ala Arg
 Phe Lys 675 Thr Ala Val Lys Leu 680 Ile Glu Gly Gly Tyr Ile Val Glu Ala
 690 Ala Ile Lys Trp Lys Thr 695 Ile Lys Pro Thr Pro Asn Thr Val Ile Gly
 705 Phe Asn Ile Gln Val 710 Asn Asp Ala Asn Glu 715 Lys Gly Gln Arg Val Gly
 Ile Ile Ser Trp 725 Ser Asp Pro Thr Asn 730 Asn Ser Trp Gln Asp Pro Ser
 Lys Phe Gly 740 Asn Leu Arg Leu Ile 745 Lys
 755 760

<210> 37
 <211> 2769
 <212> DNA

<213> Unknown

<220>

<223> obtained from an environmental sample

<400> 37

atgcacaaga	agaacggcac	ctattacctg	agctactcta	caaatccggc	caacggcatg	60
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atggcgagc	cctggcagaa	cagcaacaac	aacaaccacg	caaccagcac	cgagtacaac	180
gggcaggggc	acatcttcta	tcacaaccgt	gcgttggtcga	acgagcgtgc	gggtggcaac	240
gtgctgcagc	gctcggtgaa	cgtggatcgc	ctctacttca	atgccgatgg	cagcatccgt	300
caggtcactt	ccagtgcAAC	cggcgtgccc	gccctgaaaa	ccctggatgc	cttcctggtc	360
aagcctgccc	agctgtatca	caaggaaagc	gggatcaaga	ccgagcctgc	cagtgaagga	420
acccaggcac	tggttatgac	ggctggtagc	tgggtgcgcc	tggccaatgt	cgatttcggc	480
aatggcgccg	ccactggttt	ttccgcgcgt	attgcggaac	ccggcagcgg	cagcatccag	540
gtgatcctgg	gcaatctgaa	caacgccccg	gtcggcacgc	tggcagtga	cagcaccggc	600
aacctccaga	cctggcaaga	ccgcagcacc	gccatcagca	aggtgaccgg	cgtgcatgac	660
gtgtatttgc	gtgccaccgg	caatgtgcat	gtgcagcgtc	actggttcgt	ggcgtcggcg	720
ccggccgctg	ccgcctcatc	cagcagtcag	gcaagcgtct	ctgccagcag	tcaggcaagt	780
gtttcttcca	gtagccaggc	aagcgttgcc	tccagcagca	gttccagccg	cgcttcttcc	840
gccagcagtt	cggtggcgcc	tggccagggtg	gaggtcgggt	atcgcccttag	cagcgaatgg	900
gccgcccggc	tctgcggcgt	ggtcaccatc	cgtaatccgg	gtagtcttcc	ggtcaccagc	960
tggagtggca	gtttcaacct	gcctggcgcc	aagatcaccc	agctgtggaa	tgccaactgg	1020
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ggcgccacca	tcaccacgcc	gggcttctgc	gccgagcgca	cgagcagcaa	tgcttcttcc	1140
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gcggcttcca	gctgcccggt	cactggcagt	ggcgggggtg	gcagcagcgc	atcctcggct	1260
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gccatgttcc	ccccgttgcg	ggtcaggacg	gacgctgcgg	ccgccaacaa	ggcctatgtt	1380
gaatggccca	acaacggcgc	caatcagtcg	ctggcaacgc	ctgccaacga	tgccgcaggg	1440
cagggtggagg	tagccttctg	gctggcccag	gcacccgcag	tgcagtttga	tatcgaagcg	1500
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ctggctgccc	ggcgccatgt	gctgaccctg	ctgcgcgcgc	aggatggcgc	gaagctgggc	1680
aaggctcgtc	tgagtgcggc	acagagcagc	atcagtcgtg	ccacgcgggt	ggcctacgcg	1740
tcgccgaatg	atgttgccaa	cctgttcaag	ctggccagct	tcccgatcgg	ggtggcggtc	1800
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aagttccaag	gcatgggtgt	gcatggccat	gcgctggctc	ggcatgcgga	ctatcaggta	2040
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accgtcgcca	agcactatgc	cggcaagggtg	gtgagctggg	atgtgggtgaa	tgaagccctg	2160
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ggctggtttg	ccagcctgaa	tgccacggcc	accagactgc	agaagaagaa	gtatcgtgag	2580
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ttcgatgccg	acctcaaggc	caaggacgcc	ctgagcggct	ttgccgacgc	cctgcgcggc	2760
gtacgctga						2769

<210> 38

<211> 922

<212> PRT

<213> Unknown

<220>

<223> obtained from an environmental sample

<400> 38

Met	His	Lys	Lys	Asn	Gly	Thr	Tyr	Tyr	Leu	Ser	Tyr	Ser	Thr	Asn	Pro
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			20					25					30		
Gly	Phe	Val	His	Arg	Gly	Thr	Val	Met	Ala	Gln	Pro	Trp	Gln	Asn	Ser
		35					40					45			

Asn	Asn	Asn	Asn	His	Ala	Thr	Ser	Thr	Glu	Tyr	Asn	Gly	Gln	Gly	Tyr
Ile	50	Phe	Tyr	His	Asn	55	Ala	Leu	Ser	Asn	60	Arg	Ala	Gly	Asn
65	Val	Leu	Gln	Arg	70	Val	Asn	Val	Asp	75	Leu	Tyr	Phe	Asn	80
Gly	Ser	Ile	Arg	85	Gln	Val	Thr	Ser	90	Ala	Thr	Gly	Val	Pro	Ala
Lys	Thr	Leu	100	Asp	Ala	Phe	Leu	Val	105	Lys	Pro	Ala	Glu	Leu	His
Glu	Ser	Gly	Ile	Lys	Thr	Glu	Pro	Ala	Ser	Glu	Gly	Thr	Gln	Ala	Leu
Val	130	Met	Thr	Ala	Gly	Ser	135	Trp	Val	Arg	Leu	Ala	Asn	Val	Asp
145	Asn	Gly	Gly	Ala	Thr	Gly	Phe	Ser	Ala	Arg	Ile	Ala	Ala	Thr	Gly
Gly	Ser	Ile	Gln	Val	Ile	Leu	Gly	Asn	170	Leu	Asn	Asn	Ala	Pro	Val
Thr	Leu	Ala	Val	Ser	Ser	Thr	Gly	Asn	185	Leu	Gln	Thr	Trp	Gln	Asp
Ser	Thr	Ala	Ile	Ser	Lys	Val	Thr	Gly	Val	His	Asp	Val	Tyr	Leu	Arg
Ala	210	Thr	Gly	Asn	Val	His	Val	Gln	Arg	His	Trp	Phe	Val	Ala	Ser
225	Pro	Ala	Ala	Ala	Ala	Ser	Ser	Ser	Ser	Gln	Ala	Ser	Val	Ser	Ala
Ser	Gln	Ala	Ser	Val	Ser	Ser	Ser	Ser	250	Gln	Ala	Ser	Val	Ala	Ser
Ser	Ser	Ser	Ser	Arg	Ala	Ser	Ser	Ala	Ser	Ser	Ser	Ser	Val	Ala	Gly
Gln	Val	Glu	Val	Gly	Tyr	Arg	Leu	Ser	Ser	Glu	Trp	Ala	Ala	Gly	Phe
Cys	290	Gly	Val	Val	Thr	Ile	Arg	Asn	Pro	Gly	Ser	Ser	Pro	Val	Thr
305	Trp	Ser	Gly	Ser	Phe	Asn	Leu	Pro	Gly	Gly	Lys	Ile	Thr	Gln	Leu
Asn	Ala	Asn	Trp	Thr	Gln	Asn	Gly	Ser	Thr	Val	Thr	Val	Ser	Ser	Gln
Ala	Trp	Ser	Gly	Ala	Ile	Ala	Ala	Gly	Ala	Thr	Ile	Thr	Thr	Pro	Gly
Phe	Cys	Ala	Glu	Arg	Thr	Ser	Ser	Asn	Ala	Ser	Ser	Ser	Val	Ala	Ser
Ser	370	Ser	Val	Ser	Ser	Ser	Ser	Ser	Ala	Ala	Ala	Ala	Ser	Ser	Ser
385	Ala	Ala	Ser	Ser	Val	Pro	Ser	Thr	Gly	Ser	Gly	Gly	Val	Gly	Ser
Ala	Ser	Ser	Ala	Ser	Ser	Ala	Ala	Ala	Pro	Lys	Gly	Val	Leu	Glu	Val
Gly	Leu	Ser	Gly	Leu	Ser	Ser	Gln	Ala	Met	Phe	Ala	Pro	Leu	Arg	Val
Arg	Thr	Asp	Ala	Ala	Ala	Ala	Asn	Lys	Ala	Tyr	Val	Glu	Trp	Pro	Asn
Asn	Gly	Ala	Asn	Gln	Ser	Leu	Ala	Thr	Pro	Ala	Asn	Asp	Ala	Ala	Gly
465	Gln	Val	Glu	Val	Ala	Phe	Val	Leu	Ala	Gln	Ala	Ser	Ala	Val	Gln
Asp	Ile	Glu	Ala	Asn	Phe	Ala	Asn	Ala	Glu	Asp	Asp	Ser	Phe	Tyr	Phe
Gln	Leu	Asn	Gly	Gly	Ala	Trp	Gln	Thr	Phe	Asn	Asn	Ala	Thr	Thr	Val
Gly	Trp	Gln	Thr	Leu	Pro	Val	Ala	Ser	Leu	Gly	Asn	Leu	Ala	Ala	Gly
Arg	His	Val	Leu	Thr	Leu	Leu	Arg	Arg	Glu	Asp	Gly	Ala	Lys	Leu	Gly
545	Lys	Val	Val	Leu	Ser	Ala	Ala	Gln	Ser	Ser	Ile	Ser	Arg	Ala	Thr
Val	Ala	Tyr	Ala	Ser	Pro	Asn	Asp	Val	Ala	Asn	Leu	Phe	Lys	Leu	Ala
Ser	Phe	Pro	Ile	Gly	Val	Ala	Val	Ser	Ala	Gly	Asn	Glu	Gly	Asp	Ser

595
 Leu Leu Arg Ser Gly Thr Arg Ala Ala Ala Glu Arg Ala Leu Thr Glu
 610 615
 Lys His Phe Asn Ser Leu Val Ala Gly Asn Ile Met Lys Met Ser Tyr
 625 630 635 640
 Leu His Pro Ala Glu Asn Thr Tyr Thr Phe Thr Gln Ala Asp Ala Leu
 645 650 655
 Ala Asp Tyr Ala Lys Ser Lys Gly Met Val Leu His Gly His Ala Leu
 660 665 670
 Val Trp His Ala Asp Tyr Gln Val Pro Asn Trp Met Lys Asn Tyr Thr
 675 680 685
 Gly Asp Trp Ser Lys Met Leu Glu Ala His Val Thr Thr Val Ala Lys
 690 695 700
 His Tyr Ala Gly Lys Val Val Ser Trp Asp Val Asn Glu Ala Leu
 705 710 715 720
 Ala Asp Gly Asn Ala Thr Ala Thr Lys Gly Phe Arg Ala Thr Asp Ser
 725 730 735
 Ile Phe Tyr Gln Lys Met Gly Ser Ser Phe Ile Glu Lys Ala Phe Ile
 740 745 750
 Ala Ala Arg Ala Ala Asp Pro Asn Ala Asp Leu Tyr Tyr Asn Asp Tyr
 755 760 765
 Gly Met Glu Gly Gly Asn Ser Lys Phe Asn Tyr Cys Met Ala Met Val
 770 775 780
 Asp Asp Phe Gln Lys Arg Gly Ile Pro Ile Asp Gly Ile Gly Phe Gln
 785 790 795 800
 Met His Ile Asn Ile Asp Trp Pro Ser Ser Ala Gln Ile Arg Ala Val
 805 810 815
 Phe Ser Glu Val Val Lys Arg Gly Leu Lys Val Arg Ile Ser Glu Leu
 820 825 830
 Asp Ile Pro Val Asn Thr Thr Ala Gly Arg Phe Ala Ser Leu Asn Ala
 835 840 845
 Thr Ala Asn Glu Leu Gln Lys Lys Tyr Arg Glu Val Val Ala Ala
 850 855 860
 Tyr Leu Asp Val Val Pro Pro Glu Leu Arg Gly Gly Ile Thr Val Trp
 865 870 875 880
 Gly Leu Ser Asp Asn Gly Ser Trp Leu Val Thr Pro Thr Lys Pro Asp
 885 890 895
 Trp Pro Leu Leu Phe Asp Ala Asp Leu Lys Ala Lys Asp Ala Leu Ser
 900 905 910
 Gly Phe Ala Asp Ala Leu Arg Gly Val Arg
 915 920

<210> 39
 <211> 1143
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 39
 atgaaaaaaa cgattgcaca tttcacctta tggatagtgt tttttctctt cacttcctgt 60
 gctgttacgg cgcagaagaa tgcaaagaat acaagagtaa aaccactac cctaaaagag 120
 gcttaccaag gtaaatctta tatcgggtact gcgatgaact tgagacagat tcacggagat 180
 gatccccaat ctgaaaatat tatcaaaaaa cagttcaatt ccatagttgc cgaaaactgc 240
 atgaagagta tgtatcttca gccggaggaa ggaaaatttt tcttcgatga tgcggacaag 300
 tttgtggatt ttggtcttca gaacaatatg ttcattcattg ggcattgtct gatttggcat 360
 tcgcaggcgc caaaatgggt tttcacccgat gagaatggaa acacggtttc tccagaagtt 420
 cttaaacaaa ggatgaaagc ccatattacc gccgtcgttt cccgttacaa agggaaaatc 480
 aaagggtggg atgtggtgaa cgaagccatt atggaagatg gttcttaccg taaaagcaaa 540
 ttttacgaga ttttgggaga agaatttatt ccgttggcat ttcagtatgc gcatgaagca 600
 gatcctgatg cagaacttta ttacaacgat tataacgaat ggtatcccgg aaaaagagct 660
 acggtgacca agataatccg cgatttcaaa actagaggaa tccgcatcga tgccatcgga 720
 atgcaggctc atttcgggat ggattcgccc actgtagaag agtatgaaca aactattcag 780
 ggctatataa aagaaggcgt gaaagtcaat attacggaac tcgatttgag tccacttctt 840
 tctccttggg gaacttccgc caatgttgcc gatacgagc aatatcagga aaaaatgaat 900
 ccatacacca aaggacttcc tgcagatgtt gaaaaagcat gggaaaaccg ttatgtggat 960
 tttttcaaac tgttcctaaa atatcatcag catattgagc gtgttacgtt ttggggcggt 1020
 agcgatatcg attcctggaa gaacgatttt ccggtgaagag gacgtaccga ttatccacta 1080

ccgtttaacc gtcaatatca agcaaaacct ttggttcaga aattaataga ttttaacaaaa 1140
tag 1143

<210> 40
<211> 380
<212> PRT
<213> Unknown

<220>
<223> obtained from an environmental sample

<221> SIGNAL
<222> (1)...(24)

<400> 40
Met Lys Lys Thr Ile Ala His Phe Thr Leu Trp Ile Val Phe Phe Leu
1 5 10 15
Phe Thr Ser Cys Ala Val Thr Ala Gln Lys Asn Ala Lys Asn Thr Arg
20 25 30
Val Lys Pro Thr Thr Leu Lys Glu Ala Tyr Gln Gly Lys Phe Tyr Ile
35 40 45
Gly Thr Ala Met Asn Leu Arg Gln Ile His Gly Asp Asp Pro Gln Ser
50 55 60
Glu Asn Ile Ile Lys Lys Gln Phe Asn Ser Ile Val Ala Glu Asn Cys
65 70 75 80
Met Lys Ser Met Tyr Leu Gln Pro Glu Glu Gly Lys Phe Phe Phe Asp
85 90 95
Asp Ala Asp Lys Phe Val Asp Phe Gly Leu Gln Asn Asn Met Phe Ile
100 105 110
Ile Gly His Cys Leu Ile Trp His Ser Gln Ala Pro Lys Trp Phe Phe
115 120 125
Thr Asp Glu Asn Gly Asn Thr Val Ser Pro Glu Val Leu Lys Gln Arg
130 135 140
Met Lys Ala His Ile Thr Ala Val Val Ser Arg Tyr Lys Gly Lys Ile
145 150 155 160
Lys Gly Trp Asp Val Val Asn Glu Ala Ile Met Glu Asp Gly Ser Tyr
165 170 175
Arg Lys Ser Lys Phe Tyr Glu Ile Leu Gly Glu Glu Phe Ile Pro Leu
180 185 190
Ala Phe Gln Tyr Ala His Glu Ala Asp Pro Asp Ala Glu Leu Tyr Tyr
195 200 205
Asn Asp Tyr Asn Glu Trp Tyr Pro Gly Lys Arg Ala Thr Val Thr Lys
210 215 220
Ile Ile Arg Asp Phe Lys Thr Arg Gly Ile Arg Ile Asp Ala Ile Gly
225 230 235 240
Met Gln Ala His Phe Gly Met Asp Ser Pro Thr Val Glu Glu Tyr Glu
245 250 255
Gln Thr Ile Gln Gly Tyr Ile Lys Glu Gly Val Lys Val Asn Ile Thr
260 265 270
Glu Leu Asp Leu Ser Pro Leu Pro Ser Pro Trp Gly Thr Ser Ala Asn
275 280 285
Val Ala Asp Thr Gln Gln Tyr Gln Glu Lys Met Asn Pro Tyr Thr Lys
290 295 300
Gly Leu Pro Ala Asp Val Glu Lys Ala Trp Glu Asn Arg Tyr Val Asp
305 310 315 320
Phe Phe Lys Leu Phe Leu Lys Tyr His Gln His Ile Glu Arg Val Thr
325 330 335
Phe Trp Gly Val Ser Asp Ile Asp Ser Trp Lys Asn Asp Phe Pro Val
340 345 350
Arg Gly Arg Thr Asp Tyr Pro Leu Pro Phe Asn Arg Gln Tyr Gln Ala
355 360 365
Lys Pro Leu Val Gln Lys Leu Ile Asp Leu Thr Lys
370 375 380

<210> 41
<211> 1893
<212> DNA
<213> Unknown

<220>

<223> obtained from an environmental sample

<400> 41

atgatccatc	aacaaaagcc	caaccaagac	atcggttaggc	tattcaagcg	cagctgcagc	60
tttgtcggta	ttagcgcggc	actggctggt	ttctcacaca	ccgcaagtgc	agcctgtact	120
tacaacattg	ataaccaatg	gggcagcggt	tttgtcgcta	gtattactgt	aaagaatgac	180
actggtgcaa	ccgtcaataa	ctggagtggt	aattggcaat	atgccaaaca	tcgcatcacc	240
aatggttgga	gtgcaaat	ctctggcagc	aatccttaca	ccgccaccaa	tatgagctgg	300
aacggtagca	ttgcccgtgg	ccagtcggtg	acttttggtt	tccagggcaa	cactaacagc	360
aataccgttg	agcgcccggt	ggttaacggt	tcactgtgcg	gtactgcaac	aacctcttca	420
gttcgctcca	gcgtggctgc	gacgtcttcc	agtcgctcca	gtgttgcgcc	cagctcgatt	480
cctgcttcca	gcactccgcg	ttcaagcaca	cctgccacct	cttcttctgc	ttccagcttc	540
tcagtaccgg	ccaataat	tgcgcagaat	ggcggcggtg	aatctggttt	gaccaactgg	600
ggtagcagtg	cgggcacctg	gactcgctct	actgccgata	aacacagcgg	tacagccagt	660
gccttaatta	ccggccgcac	tgctgcctgg	aatggtttga	cgtttaatgt	gggcgcat	720
accaacggca	accagtacca	agtcaacgtg	tgggtgaaat	tggctccagg	tacgcccagc	780
agcgtagtga	ccttaaccgg	taagcgtgta	gacgatagcg	atactactac	ctacaacgaa	840
tacacacgcg	tagcgactgt	gactgcctct	gccaatgagt	ggcgtttgct	ggaagggttac	900
tacacccaat	ctggcagcac	tgcatctccag	catttcatta	tcgaagcaac	ggatactact	960
gccagttatt	acgcggatga	tttcgccatc	ggcgggtcaag	tcgtacaagt	tccaagcagc	1020
agctcacgca	gctcaagcag	tgctccggcg	gctagaaaaat	tcacgcggcaa	catcaccacc	1080
tcgggtgtag	tgagatccga	ctttactcgt	tactggaacc	aaattacacc	agagaacgaa	1140
ggtaagtggg	gttccgttga	aggtagctgc	aaccagtaca	actgggcacc	gctggatcgt	1200
atztatgctt	acgctcgcca	aaataatatt	ccggtaaaag	ctcacacgtt	tgtgtggggg	1260
gcgcaatcac	ccgcgtggct	caataactta	agcggaccgg	aagtcgctgt	tgaaattgaa	1320
caatggattc	gcgattactg	tactcgttac	cctgacacgg	cgatgattga	cgtagtgaac	1380
gaagcgggtc	ctggccatca	accggcaggt	tatgcacaac	gagcatttgg	caataactgg	1440
atccaacgcg	tgttccaatt	ggctcgccaa	tattgcccta	actcgatcct	gatcctgaat	1500
gattacaaca	atatccgttg	gcagcacaat	gagtttattg	cccttgcaaa	agctcaaggc	1560
aattatattg	atgcagtcgg	cctgcaggcg	catgaactga	agggtatgac	agcggcgcaa	1620
gtcaaaaaccg	caatcgacaa	tatttggaa	caagtgggca	agcccatcta	catttctgaa	1680
tacgacattg	gcgataacaa	tgaccaggtt	caattgcaga	atttccaggc	gcatttcctt	1740
gtattctggg	accatccgca	tgttaaaggc	atcaccattt	gggggttatgt	caatggcaga	1800
acttggtattg	aaggctcggg	cctgatttct	gacaacggaa	caccgcgccc	cgcaatgact	1860
tggttgctga	ataactatat	caataagcag	taa			1893

<210> 42

<211> 630

<212> PRT

<213> Unknown

<220>

<223> obtained from an environmental sample

<221> SIGNAL

<222> (1)...(37)

<400> 42

Met	Ile	His	Gln	Gln	Lys	Pro	Asn	Gln	Asp	Ile	Gly	Arg	Leu	Phe	Lys
1				5					10					15	
Arg	Ser	Cys	Ser	Phe	Val	Gly	Ile	Ser	Ala	Ala	Leu	Ala	Val	Phe	Ser
			20					25					30		
His	Thr	Ala	Ser	Ala	Ala	Cys	Thr	Tyr	Asn	Ile	Asp	Asn	Gln	Trp	Gly
			35				40					45			
Ser	Gly	Phe	Val	Ala	Ser	Ile	Thr	Val	Lys	Asn	Asp	Thr	Gly	Ala	Thr
			50			55					60				
Val	Asn	Asn	Trp	Ser	Val	Asn	Trp	Gln	Tyr	Ala	Asn	Asn	Arg	Ile	Thr
65					70				75					80	
Asn	Gly	Trp	Ser	Ala	Asn	Phe	Ser	Gly	Ser	Asn	Pro	Tyr	Thr	Ala	Thr
				85				90						95	
Asn	Met	Ser	Trp	Asn	Gly	Ser	Ile	Ala	Ala	Gly	Gln	Ser	Val	Thr	Phe
			100					105					110		
Gly	Phe	Gln	Gly	Asn	Thr	Asn	Ser	Asn	Thr	Val	Glu	Arg	Pro	Val	Val
			115				120				125				
Asn	Gly	Ser	Leu	Cys	Gly	Thr	Ala	Thr	Thr	Ser	Ser	Val	Arg	Ser	Ser
			130			135					140				
Val	Ala	Ala	Thr	Ser	Ser	Arg	Ser	Ser	Val	Ala	Pro	Ser	Ser	Ile	
145					150				155					160	

Pro Ala Ser Ser Thr Pro Arg Ser Ser Thr Pro Ala Thr Ser Ser Ser
 165 170 175
 Ala Ser Ser Phe Ser Val Pro Ala Asn Asn Phe Ala Gln Asn Gly Gly
 180 185 190
 Val Glu Ser Gly Leu Thr Asn Trp Gly Thr Thr Ala Gly Thr Val Thr
 195 200 205
 Arg Ser Thr Ala Asp Lys His Ser Gly Thr Ala Ser Ala Leu Ile Thr
 210 215 220
 Gly Arg Thr Ala Ala Trp Asn Gly Leu Thr Phe Asn Val Gly Ala Leu
 225 230 235 240
 Thr Asn Gly Asn Gln Tyr Gln Val Asn Val Trp Val Lys Leu Ala Pro
 245 250 255
 Gly Thr Pro Asp Ser Val Leu Thr Leu Thr Gly Lys Arg Val Asp Asp
 260 265 270
 Ser Asp Thr Thr Thr Tyr Asn Glu Tyr Thr Arg Val Ala Thr Val Thr
 275 280 285
 Ala Ser Ala Asn Glu Trp Arg Leu Leu Glu Gly Tyr Tyr Thr Gln Ser
 290 295 300
 Gly Ser Thr Ala Phe Gln His Phe Ile Ile Glu Ala Thr Asp Thr Thr
 305 310 315 320
 Ala Ser Tyr Tyr Ala Asp Asp Phe Ala Ile Gly Gly Gln Val Val Gln
 325 330 335
 Val Pro Ser Ser Ser Arg Ser Ser Ser Ala Pro Ala Ala Arg
 340 345 350
 Lys Phe Ile Gly Asn Ile Thr Thr Ser Gly Ala Val Arg Ser Asp Phe
 355 360 365
 Thr Arg Tyr Trp Asn Gln Ile Thr Pro Glu Asn Glu Gly Lys Trp Gly
 370 375 380
 Ser Val Glu Gly Thr Arg Asn Gln Tyr Asn Trp Ala Pro Leu Asp Arg
 385 390 395 400
 Ile Tyr Ala Tyr Ala Arg Gln Asn Asn Ile Pro Val Lys Ala His Thr
 405 410 415
 Phe Val Trp Gly Ala Gln Ser Pro Ala Trp Leu Asn Asn Leu Ser Gly
 420 425 430
 Pro Glu Val Ala Val Glu Ile Glu Gln Trp Ile Arg Asp Tyr Cys Thr
 435 440 445
 Arg Tyr Pro Asp Thr Ala Met Ile Asp Val Val Asn Glu Ala Val Pro
 450 455 460
 Gly His Gln Pro Ala Gly Tyr Ala Gln Arg Ala Phe Gly Asn Asn Trp
 465 470 475 480
 Ile Gln Arg Val Phe Gln Leu Ala Arg Gln Tyr Cys Pro Asn Ser Ile
 485 490 495
 Leu Ile Leu Asn Asp Tyr Asn Asn Ile Arg Trp Gln His Asn Glu Phe
 500 505 510
 Ile Ala Leu Ala Lys Ala Gln Gly Asn Tyr Ile Asp Ala Val Gly Leu
 515 520 525
 Gln Ala His Glu Leu Lys Gly Met Thr Ala Ala Gln Val Lys Thr Ala
 530 535 540
 Ile Asp Asn Ile Trp Asn Gln Val Gly Lys Pro Ile Tyr Ile Ser Glu
 545 550 555 560
 Tyr Asp Ile Gly Asp Asn Asn Asp Gln Val Gln Leu Gln Asn Phe Gln
 565 570 575
 Ala His Phe Pro Val Phe Trp Asp His Pro His Val Lys Gly Ile Thr
 580 585 590
 Ile Trp Gly Tyr Val Asn Gly Arg Thr Trp Ile Glu Gly Ser Gly Leu
 595 600 605
 Ile Ser Asp Asn Gly Thr Pro Arg Pro Ala Met Thr Trp Leu Leu Asn
 610 615 620
 Asn Tyr Ile Asn Lys Gln 630

<210> 43
 <211> 1011
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 43
 atgcaaacaa atattaaagg aaataacatt ccatcattac acgaagttta tcaagatcac 60
 tttttgatag gtgcagcagt taatccaaaa acatttagact cacagcagga tttattgaga 120
 aaacacttta acagtattac agctgaaaaat gaaatgaaat ttgaagaatt gcaaccagaa 180
 cctggccatt tcacgttttg tgtagcagat gaaatcgttt cttttgcaaa agaaaatgga 240
 atgaaagtta gaggacatac attagtttgg cataatcaaa cgcctgattg gatgtttttg 300
 aatgaagatg gatctgtcac agatcgagaa acgcttctag aaagaatgaa attacacatt 360
 acaacagtta tgcagcatta caaagggtcaa gcttatttgct gggatgttgt aaatgaggtg 420
 attgctgacg aggggtacaga gttattccgt aaatctaaat ggactgaaat tattgggtgat 480
 gattttgtag aaaaggcatt tgaatatgca catgaggctg atccagaagc tttactattc 540
 tacaatgact ataatgaatc ccatcccaat aagcgtgaga aaattttcac acttgtaaaa 600
 ggattagttg ataaggggat acctattcat ggaatcggtt tacaagcaca ttggaattta 660
 acaggacctt cttatgaaga tattagagca gcactcgaga aatatgctac attgggattg 720
 gaaatacacc ttaccgaatt ggaatgttct gtttttaatt atgaagatcg aagaacagat 780
 ttaacagaac caactaaaga tatgcaagcg cttcaagcgg agcgttatac agaattattc 840
 aagatatattg gagaatatag tcatgtaatc agttcgatta ctttttgggg agctgcagat 900
 gattatactt ggtttagatga ttttcctgtc aaaggaagaa aaaactggcc atttgttttt 960
 gatgaaaacc aagagccaaa agagtcattt tggaatatta ttgactttta a 1011

<210> 44
 <211> 336
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 44
 Met Gln Thr Asn Ile Lys Gly Asn Asn Ile Pro Ser Leu His Glu Val
 1 5 10 15
 Tyr Gln Asp His Phe Leu Ile Gly Ala Val Asn Pro Lys Thr Leu
 20 25 30
 Asp Ser Gln Gln Asp Leu Leu Arg Lys His Phe Asn Ser Ile Thr Ala
 35 40 45
 Glu Asn Glu Met Lys Phe Glu Glu Leu Gln Pro Glu Pro Gly His Phe
 50 55 60
 Thr Phe Gly Val Ala Asp Glu Ile Val Ser Phe Ala Lys Glu Asn Gly
 65 70 75 80
 Met Lys Val Arg Gly His Thr Leu Val Trp His Asn Gln Thr Pro Asp
 85 90 95
 Trp Met Phe Leu Asn Glu Asp Gly Ser Val Thr Asp Arg Glu Thr Leu
 100 105 110
 Leu Glu Arg Met Lys Leu His Ile Thr Thr Val Met Gln His Tyr Lys
 115 120 125
 Gly Gln Ala Tyr Cys Trp Asp Val Val Asn Glu Val Ile Ala Asp Glu
 130 135 140
 Gly Thr Glu Leu Phe Arg Lys Ser Lys Trp Thr Glu Ile Ile Gly Asp
 145 150 155 160
 Asp Phe Val Glu Lys Ala Phe Glu Tyr Ala His Glu Ala Asp Pro Glu
 165 170 175
 Ala Leu Leu Phe Tyr Asn Asp Tyr Asn Glu Ser His Pro Asn Lys Arg
 180 185 190
 Glu Lys Ile Phe Thr Leu Val Lys Gly Leu Val Asp Lys Gly Ile Pro
 195 200 205
 Ile His Gly Ile Gly Leu Gln Ala His Trp Asn Leu Thr Gly Pro Ser
 210 215 220
 Tyr Glu Asp Ile Arg Ala Ala Leu Glu Lys Tyr Ala Thr Leu Gly Leu
 225 230 235 240
 Glu Ile His Leu Thr Glu Leu Asp Val Ser Val Phe Asn Tyr Glu Asp
 245 250 255
 Arg Arg Thr Asp Leu Thr Glu Pro Thr Lys Asp Met Gln Ala Leu Gln
 260 265 270
 Ala Glu Arg Tyr Thr Glu Leu Phe Lys Ile Leu Arg Glu Tyr Ser His
 275 280 285
 Val Ile Ser Ser Ile Thr Phe Trp Gly Ala Ala Asp Asp Tyr Thr Trp
 290 295 300
 Leu Asp Asp Phe Pro Val Lys Gly Arg Lys Asn Trp Pro Phe Val Phe
 305 310 315 320
 Asp Glu Asn Gln Glu Pro Lys Glu Ser Phe Trp Asn Ile Ile Asp Phe

325

330

335

<210> 45
 <211> 1137
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 45
 atgaagatat cagcccgaca attacttgct atgggtgggt cgcctgcaac cctggcctct 60
 gccaaattat tgcgtgccga aaaagctgct gccgccaccg gattgaaaga tgcctataaa 120
 aacgatttcc tgatcgggtgc tgcattaaat acccaaattg ttgatggcaa agaccccaaa 180
 cttactgcac tgatcaccaa agaatttaat tcaattaccg cagagaattg ccagaagtgg 240
 gaaaggttgc gcaatgaaaa agatggttagc tgggaatgga aagatagcga tgcctttgtg 300
 aatttcgggg ttgcccataa catgcatatt gtcgggcata cgttgggctg gcatagccaa 360
 attcccgcga gcgtctttta aaacaaagat ggcagttata tttccaaaga ggcactggca 420
 aaaaaacaac aagagcacat caccacctta gtggatcggt acaaaggcaa aattgccgca 480
 tgggatgtgg ttaacgaagc catgggcgat gacaacaaga tgcgcgcaag ccattggtac 540
 aacattatgg gtgatgactt tctcgtcaac gcctttaagc tcgcgcatga gactgacccc 600
 aaagcacatt tgatgtacaa cgattacaac aacgagcgcc cggaaaagcg cgcagcaacg 660
 gttgatatgc tcaagcgctt gttaaaactc ggggcgcgca tccacggttt gggaaatgcag 720
 gcacatatgc gcctggatgc ggatatgaaa aactttgaag acagtattgt cgcctattca 780
 gaattaggct tgcgtattca ccttaccgaa ctggatatag atgtgttgcc ctcggtgtgg 840
 aatttgccag tcgctgaagt atctaccctg tttgaatata aaccggagcg agatccctac 900
 atcaaaggcc tgccaaaaga gatcgacgaa aaactcgcgga aggcctatga atcgctattt 960
 aaaattttgc ttaagcataa agacaaagta gatcgtgtga ctttctgggg tgtgagtgat 1020
 gatgccagct ggctaaatgg cttcccgatc ccgggcccga ccaattatcc actgttattt 1080
 gaccgtaagc agcaacctaa agcagcgtac ttccgcttac tggatttaaa gcgttaa 1137

<210> 46
 <211> 378
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(25)

<400> 46
 Met Lys Ile Ser Arg Arg Gln Leu Leu Ala Met Gly Gly Ala Ala Ala
 1 5 10 15
 Thr Leu Ala Ser Ala Lys Leu Phe Ala Ala Glu Lys Ala Ala Ala Ala
 20 25 30
 Thr Gly Leu Lys Asp Ala Tyr Lys Asn Asp Phe Leu Ile Gly Ala Ala
 35 40 45
 Leu Asn Thr Gln Ile Val Asp Gly Lys Asp Pro Lys Leu Thr Ala Leu
 50 55 60
 Ile Thr Lys Glu Phe Asn Ser Ile Thr Ala Glu Asn Cys Gln Lys Trp
 65 70 75 80
 Glu Arg Leu Arg Asn Glu Lys Asp Gly Ser Trp Glu Trp Lys Asp Ser
 85 90 95
 Asp Ala Phe Val Asn Phe Gly Val Ala His Asn Met His Ile Val Gly
 100 105 110
 His Thr Leu Gly Trp His Ser Gln Ile Pro Asp Ser Val Phe Lys Asn
 115 120 125
 Lys Asp Gly Ser Tyr Ile Ser Lys Glu Ala Leu Ala Lys Lys Gln Gln
 130 135 140
 Glu His Ile Thr Thr Leu Val Asp Arg Tyr Lys Gly Lys Ile Ala Ala
 145 150 155 160
 Trp Asp Val Val Asn Glu Ala Met Gly Asp Asp Asn Lys Met Arg Ala
 165 170 175
 Ser His Trp Tyr Asn Ile Met Gly Asp Asp Phe Leu Val Asn Ala Phe
 180 185 190
 Lys Leu Ala His Glu Thr Asp Pro Lys Ala His Leu Met Tyr Asn Asp
 195 200 205


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Tyr Asn Asn Glu Arg Pro Glu Lys Arg Ala Ala Thr Val Asp Met Leu
    210      215      220
Lys Arg Leu Leu Lys Leu Gly Ala Pro Ile His Gly Leu Gly Met Gln
225      230      240
Ala His Ile Gly Leu Asp Ala Asp Met Lys Asn Phe Glu Asp Ser Ile
    245      250      255
Val Ala Tyr Ser Glu Leu Gly Leu Arg Ile His Leu Thr Glu Leu Asp
    260      265      270
Ile Asp Val Leu Pro Ser Val Trp Asn Leu Pro Val Ala Glu Val Ser
    275      280      285
Thr Arg Phe Glu Tyr Lys Pro Glu Arg Asp Pro Tyr Ile Lys Gly Leu
    290      295      300
Pro Lys Glu Ile Asp Glu Lys Leu Ala Lys Ala Tyr Glu Ser Leu Phe
    305      310      315
Lys Ile Leu Leu Lys His Lys Asp Lys Val Asp Arg Val Thr Phe Trp
    325      330      335
Gly Val Ser Asp Asp Ala Ser Trp Leu Asn Gly Phe Pro Ile Pro Gly
    340      345      350
Arg Thr Asn Tyr Pro Leu Leu Phe Asp Arg Lys Gln Gln Pro Lys Ala
    355      360      365
Ala Tyr Phe Arg Leu Leu Asp Leu Lys Arg
    370      375

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<210> 47
 <211> 1137
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

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<400> 47
atgaaaagaa taaagattct gaattcgatt gtattagctt taatcctggc gatcatcctg      60
ccgggatgtt ccaatgcaca gaagagcgag ccggtgctga aagatgccct ttcgggaaaa      120
ttttacatcg gggctgctct caataccccc caaattacgg gccgggatac cttgtccatg      180
aaaatggtca ccagacattt taactccatc gttagctgaga actgcatgaa aagcggggag      240
atccagcgga ccgaagggga gtttgatttc agtcttgccg accagtttgt cgcgttcggc      300
gaaaaacaca acatgcacat tgtggggcat accctgatat ggcattcaca ggcgccgcgc      360
tggtttttca ccggtgcaga cggaaacgaa gtcagccggg aggtactgat tgagcgcatg      420
aagaaccata tttatacggg cgtggggcgt tacaaaggcc gtgtccacgg ctgggatgtg      480
gtcaacgaag ccattgaaga caacggctca tggcgcaaca gcaagtttta ccagatctta      540
ggtgacgagt ttgtggaact ggcctttaa tttgccgcag aagccgaccc ggatgccgaa      600
ctttactata acgactactc catggcatta gaaggcagga gaaatggcgt tatcagaatg      660
gtgaagaacc ttcagtccaa gggactcaaa attgacggta tcggcatgca ggggcatctg      720
ctcatggact cggccacgct ggaagcttat gaagaaagta tcctggccta ttccggactg      780
ggcgttaagg tgatgatcac ggaactcgat ttgtctgcgc tgccatggcc agcccgtcag      840
cagggagccg atattgccct gagggctgag tatgaggcac ggatgaatcc ttacaccgaa      900
ggtttaaccg attcagcttc cgtggcatgg aatcagcgga tgggcgattt cttctctctt      960
ttcctgaagc accaggacaa aatcagcagg gttacccttt ggggggtcac cgataaccaa     1020
tcctggaaaa ataactttcc gatgagagga aggacagact acccgttgct ttttgaccgg     1080
aattaccaac ccaaaccggt ggtggaaaga atcatcaaag aagcgaaagc aaaataa      1137

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<210> 48
 <211> 378
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(26)

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<400> 48
Met Lys Arg Ile Lys Ile Leu Asn Ser Ile Val Leu Ala Leu Ile Leu
  1      5      10      15
Ala Ile Ile Leu Pro Gly Cys Ser Asn Ala Gln Lys Ser Glu Pro Val
    20      25      30
Leu Lys Asp Ala Leu Ser Gly Lys Phe Tyr Ile Gly Ala Ala Leu Asn

```

35 40 45
 Thr Pro Gln Ile Thr Gly Arg Asp Thr Leu Ser Met Lys Met Val Thr
 50 55 60
 Arg His Phe Asn Ser Ile Val Ala Glu Asn Cys Met Lys Ser Gly Glu
 65 70 75 80
 Ile Gln Arg Thr Glu Gly Glu Phe Asp Phe Ser Leu Ala Asp Gln Phe
 85 90 95
 Val Ala Phe Gly Glu Lys His Asn Met His Ile Val Gly His Thr Leu
 100 105 110
 Ile Trp His Ser Gln Ala Pro Arg Trp Phe Phe Thr Gly Ala Asp Gly
 115 120 125
 Asn Glu Val Ser Arg Glu Val Leu Ile Glu Arg Met Lys Asn His Ile
 130 135 140
 Tyr Thr Val Val Gly Arg Tyr Lys Gly Arg Val His Gly Trp Asp Val
 145 150 155 160
 Val Asn Glu Ala Ile Glu Asp Asn Gly Ser Trp Arg Asn Ser Lys Phe
 165 170 175
 Tyr Gln Ile Leu Gly Asp Glu Phe Val Glu Leu Ala Phe Lys Phe Ala
 180 185 190
 Ala Glu Ala Asp Pro Asp Ala Glu Leu Tyr Tyr Asn Asp Tyr Ser Met
 195 200 205
 Ala Leu Glu Gly Arg Arg Asn Gly Val Ile Arg Met Val Lys Asn Leu
 210 215 220
 Gln Ser Lys Gly Leu Lys Ile Asp Gly Ile Gly Met Gln Gly His Leu
 225 230 235 240
 Leu Met Asp Ser Pro Thr Leu Glu Ala Tyr Glu Glu Ser Ile Leu Ala
 245 250 255
 Tyr Ser Gly Leu Gly Val Lys Val Met Ile Thr Glu Leu Asp Leu Ser
 260 265 270
 Ala Leu Pro Trp Pro Ala Arg Gln Gln Gly Ala Asp Ile Ala Leu Arg
 275 280 285
 Ala Glu Tyr Glu Ala Arg Met Asn Pro Tyr Thr Glu Gly Leu Thr Asp
 290 295 300
 Ser Ala Ser Val Ala Trp Asn Gln Arg Met Gly Asp Phe Phe Ser Leu
 305 310 315 320
 Phe Leu Lys His Gln Asp Lys Ile Ser Arg Val Thr Leu Trp Gly Val
 325 330 335
 Thr Asp Asn Gln Ser Trp Lys Asn Asn Phe Pro Met Arg Gly Arg Thr
 340 345 350
 Asp Tyr Pro Leu Leu Phe Asp Arg Asn Tyr Gln Pro Lys Pro Val Val
 355 360 365
 Glu Arg Ile Ile Lys Glu Ala Lys Ala Lys
 370 375

<210> 49
 <211> 996
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 49
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 gcggtcaatc ctgtgacgat cgagatgcaa aaacagtgtg tgatcgatca tgtcaacagt 120
 attacggcag agaaccatat gaagtttgag catcttcagc cggaagaagg gaaatttacc 180
 tttcaggaag cggatcggat tgtggatttt gcttggttcgc accgaatggc ggttcgaggg 240
 cacacacttg tatggcacaa ccagactccg gattgggtgt ttcaagatgg tcaaggccat 300
 ttcgtcagtc gggatgtgtt gcttgagcgg atgaaatgtc acatttcaac tgttgtagcg 360
 cgatacaagg gaaaaatata ttgttgggat gtcacacacg aagcggtagc cgacgaagga 420
 gacgaattgt tgaggccgtc gaagtggcga caaatcatcg gggacgattt tatggaacaa 480
 gcaatttctc acgcttatga agctgaccca gatgcactgc ttttttacia tgactataat 540
 gaattgtttc cggaaaagag agaaaaaatt tttgcacttg tcaaatcgct gcgtgataaa 600
 ggcattccga ttcattggcat cggcatgcat gctgactgga gcctgaccgc cccgtcgctt 660
 gatgaaattc ttgcggcgat tgaacggtat gcgtcccttg gtgttggtct tcatattacg 720
 gaactcgatg tatccatgtt tgaatttcac gatcgctcgaa ccgatttggc tgtcccgcag 780
 aacgaaatga tcgaacagca agcagaacgg tatgggcaaa tttttgcttt gtttaaggag 840
 tatcgcgatg ttattcaaag tgtcacattt tggggaattg ctgatgacca tacatggctc 900
 gataactttc cagtgcacgg gagaaaaaac tggccgcttt tgttcgatga acagcataaa 960

ccgaaaccag ctttttggcg ggcagtgagt gtctga

996

<210> 50
 <211> 331
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 50
 Met Asn Ser Ser Leu Pro Ser Leu Arg Asp Val Phe Ala Asn Asp Phe
 1 5 10 15
 Arg Ile Gly Ala Val Asn Pro Val Thr Ile Glu Met Gln Lys Gln
 20 25 30
 Leu Leu Ile Asp His Val Asn Ser Ile Thr Ala Glu Asn His Met Lys
 35 40 45
 Phe Glu His Leu Gln Pro Glu Gly Lys Phe Thr Phe Gln Glu Ala
 50 55 60
 Asp Arg Ile Val Asp Phe Ala Cys Ser His Arg Met Ala Val Arg Gly
 65 70 75 80
 His Thr Leu Val Trp His Asn Gln Thr Pro Asp Trp Val Phe Gln Asp
 85 90 95
 Gly Gln Gly His Phe Val Ser Arg Asp Val Leu Leu Glu Arg Met Lys
 100 105 110
 Cys His Ile Ser Thr Val Val Arg Tyr Lys Gly Lys Ile Tyr Cys
 115 120 125
 Trp Asp Val Ile Asn Glu Ala Val Ala Asp Glu Gly Asp Glu Leu Leu
 130 135 140
 Arg Pro Ser Lys Trp Arg Gln Ile Ile Gly Asp Asp Phe Met Glu Gln
 145 150 155 160
 Ala Phe Leu Tyr Ala Tyr Glu Ala Asp Pro Asp Ala Leu Leu Phe Tyr
 165 170 175
 Asn Asp Tyr Asn Glu Cys Phe Pro Glu Lys Arg Glu Lys Ile Phe Ala
 180 185 190
 Leu Val Lys Ser Leu Arg Asp Lys Gly Ile Pro Ile His Gly Ile Gly
 195 200 205
 Met Gln Ala His Trp Ser Leu Thr Arg Pro Ser Leu Asp Glu Ile Arg
 210 215 220
 Ala Ala Ile Glu Arg Tyr Ala Ser Leu Gly Val Val Leu His Ile Thr
 225 230 235 240
 Glu Leu Asp Val Ser Met Phe Glu Phe His Asp Arg Arg Thr Asp Leu
 245 250 255
 Ala Val Pro Thr Asn Glu Met Ile Glu Gln Gln Ala Glu Arg Tyr Gly
 260 265 270
 Gln Ile Phe Ala Leu Phe Lys Glu Tyr Arg Asp Val Ile Gln Ser Val
 275 280 285
 Thr Phe Trp Gly Ile Ala Asp His Thr Trp Leu Asp Asn Phe Pro
 290 295 300
 Val His Gly Arg Lys Asn Trp Pro Leu Leu Phe Asp Glu Gln His Lys
 305 310 315 320
 Pro Lys Pro Ala Phe Trp Arg Ala Val Ser Val
 325 330

<210> 51
 <211> 3162
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 51
 atgagagggg aaagcaaaaa gggatttctg aacatctcag aagctgtact tgttggaatt 60
 ttagcaggct ttcttggagt tcttctcgca gctacggggg ttttgagttt tgggtggaaca 120
 gcgtcttcgt ctcttgaaac ggtgttcacc ttgagtttcg agggaacaac gcaaggtgtc 180
 aatccctttg gaaaagaagt agttctcaca gcttctcaag atgtagcagc cgatggcgaa 240
 tattcattga aagtagagaa tagaacttcc ggctgggatg gagttgagat cgatttaacg 300
 gaaaaagtag aagcgaacaa agattatctg ttgtctttct acgtctatca aacatctgac 360

tcaccccaac	tttttgaagt	ccttgcaaga	acagaagacg	ggaaagggtga	aaaatacgaa	420
acccttaccg	acaagggtggt	agtatcgaac	tactggaaag	aaattcttgt	gcccttttcc	480
ccgagtttcg	agagtacccc	aacaaaatgt	tctttgatcg	ttgtttcacc	aaagaaccca	540
tcattcactt	tctatatattga	caagggttcaa	attctcaaac	cgaagaagca	agggtccacaa	600
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gtgaaaatca	aagtgcacatc	gaaagtgtgct	cattctggaa	aaaggctctct	ctatgtctcc	720
aacagacaaa	aaggctggca	tgggtgtacaa	cttgacgtga	agagactctt	gagacccggg	780
aaaacgtatg	cttttgaagg	atgggtttat	caagactctg	gacaggatca	aacaattatt	840
ctgacgatgc	agagaagata	ttcttctgat	tctagcacac	aatatgagtg	gatcaaggcg	900
gtaactgttc	catcaggaca	atggacgcag	atctctggaa	cttacacaat	ccaaccaaga	960
gtaagcgtgg	aggaactcat	tgtttacttt	gaagccaagg	atcccaactct	tgccttctat	1020
gtggagcagt	tcaaaaataac	ggataccaca	actactgaca	tcaagctcga	gctgaagcct	1080
gaagaagaaa	ttccagctct	taaagaagtg	cttggagatt	acttcaaagt	agggtgtggc	1140
ttacctttca	aagtttttgc	caaaccagag	gatattgtct	tcattactaa	acatttcaac	1200
agcatcactg	ccgaaaacga	aatgaaacct	gagagtctct	tggctggcgt	agaaaatgga	1260
aagttgaagt	tcaggtttga	gacagcagac	aaatacgtag	aatttgcaca	gcaaaacggg	1320
atggttgtga	gaggtcacac	tctggtgtgg	cacaatcaaa	caccggactg	gttcttcaag	1380
gacgagaacg	gaaatctgct	ctccaaagaa	gcaatgactg	aaaggcttag	ggaatacatc	1440
cacacagtcg	tcggacactt	caaaggcaaa	gtttacgcgt	gggacgtcgt	taatgaggca	1500
gtagatccat	cccaaccaga	tggacttaga	agatctatat	ggtagcgaat	catgggacct	1560
gactatatag	aacttgcatt	caagtttgca	agagaagcgg	accccaatgc	aaagctcttc	1620
tacaacagat	acaacaccta	ccaggagaag	aagagagaca	tcattttacaa	cctcgtcaaa	1680
tccctcaaag	agaagggact	cattgacggg	atcggtatgc	agtgtcatat	cggtgttggg	1740
accagtgtca	aagagattga	agaggcaatc	aaaaaattca	gcaccattcc	aggatcga	1800
attcatatca	cggaaactaga	tataagtgtg	tacgaggatg	cgacttccaa	ttatccaaca	1860
cctccaaggg	aggctctcat	taaacaagca	cacgtaatga	gagaactctt	tgccatcttc	1920
aaaaagttaca	gcaaacgtcat	aacaaacgtt	actttctggg	gattgaaaga	tgattatttc	1980
tggaagaatg	cccgacagaa	cgactggccg	ctactttttg	ataaagacta	ccaagccaaa	2040
cttgccctact	gggccatagt	cagtcctgag	gctctaccgg	tgcttccaaa	gaaatgggtct	2100
atcgctacag	gtagtgtctt	ggtagtgtga	atgatggatg	actcctatct	ggcttcttca	2160
cctatcaaaa	ttctcgtcga	tggccaagaa	aaactcacag	ccagagtcac	ctgggaagaa	2220
aacaaactct	tcgtctacgc	agaggtctat	gacaggacaa	gagacaaagg	aaaggacggg	2280
atcaccatct	ttgtggatcc	taaaaacttc	aaggcacctt	acttgcacga	agatgctttc	2340
tacgttacca	taaaaaccga	ctggagtgtt	gagaagagtc	gtgatgacat	agaagtccag	2400
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atagatgaca	tctggtacac	cactgaagaa	atctcaaccg	atgttgttgt	catgggttca	2700
tccaagaacg	caagggcaca	agtgaagtg	ctctgggatg	aagagcacct	ctatgtgtct	2760
gccatcgtaa	ccgatcctgt	gctcaataag	gacaacacca	atccatggga	acaagactct	2820
gtagaaatct	tcatagacga	aaacaacgcc	aaaacaccgt	actatcagga	cgatgatgct	2880
caatatcggtg	tcaactacct	caacgaacaa	tccttcggta	cagggtgcaag	cagcaagaac	2940
ttcaagacag	ccgtgaaact	catcgatggt	ggttatcttg	ttgaggcagc	ggttaaatgg	3000
aagaccatca	aacccttcacc	aaacacagtg	ataggctttg	atttccaggt	gaacgatgca	3060
aatgctcaag	gtaagagagt	tggataactt	aagtgggtgcg	atccaacgga	caacagctgg	3120
cagaataacct	ccaagtttgg	taatctcagg	ttgataaaat	ag		3162

<210> 52
 <211> 1053
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(30)

<400> 52
 Met Arg Gly Lys Ser Lys Lys Gly Phe Leu Asn Ile Ser Glu Ala Val
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 Leu Val Gly Ile Leu Ala Gly Phe Leu Gly Val Leu Leu Ala Ala Thr
 20 25 30
 Gly Val Leu Ser Phe Gly Gly Thr Ala Ser Ser Ser Leu Glu Thr Val
 35 40 45
 Phe Thr Leu Ser Phe Glu Gly Thr Thr Gln Gly Val Asn Pro Phe Gly
 50 55 60
 Lys Glu Val Val Leu Thr Ala Ser Gln Asp Val Ala Ala Asp Gly Glu

65	Tyr	Ser	Leu	Lys	Val	70	Glu	Asn	Arg	Thr	75	Ser	Gly	Trp	Asp	Gly	Val	80	Glu
	Ile	Asp	Leu	Thr	85	Glu	Lys	Val	Glu	Ala	90	Asn	Lys	Asp	Tyr	Leu	95	Leu	Ser
	Phe	Tyr	Val	Tyr	100	Gln	Thr	Ser	Asp	Ser	105	Pro	Gln	Leu	Phe	Glu	110	Val	Leu
	Ala	Arg	Thr	Glu	115	Asp	Gly	Lys	Gly	Glu	120	Lys	Tyr	Glu	Thr	Leu	125	Thr	Asp
	Lys	Val	Val	Val	130	Ser	Asn	Tyr	Trp	Lys	135	Glu	Ile	Leu	Val	Pro	140	Phe	Ser
	Pro	Ser	Phe	Glu	145	Ser	Thr	Pro	Thr	Lys	150	Cys	Ser	Leu	Ile	Val	155	Val	Ser
	Pro	Lys	Asn	Pro	165	Ser	Phe	Thr	Phe	Tyr	170	Ile	Asp	Lys	Val	Gln	175	Ile	Leu
	Lys	Pro	Lys	Lys	180	Gln	Gly	Pro	Gln	Val	185	Ile	Tyr	Glu	Thr	Ser	190	Phe	Glu
	Ser	Gly	Thr	Gly	195	Ser	Trp	Gln	Ala	Arg	200	Gly	Ser	Asp	Val	Lys	205	Ile	Lys
	Val	Thr	Ser	Lys	210	Val	Ala	His	Ser	Gly	215	Lys	Arg	Ser	Leu	Tyr	220	Val	Ser
	Asn	Arg	Gln	Lys	225	Gly	Trp	His	Gly	Val	230	Gln	Leu	Asp	Val	Lys	235	Arg	Leu
	Leu	Arg	Pro	Gly	245	Lys	Thr	Tyr	Ala	Phe	250	Glu	Gly	Trp	Val	Tyr	255	Gln	Asp
	Ser	Gly	Gln	Asp	260	Gln	Thr	Ile	Ile	Leu	265	Thr	Met	Gln	Arg	Arg	270	Tyr	Ser
	Ser	Asp	Ser	Ser	275	Thr	Gln	Tyr	Glu	Trp	280	Ile	Lys	Ala	Val	Thr	285	Val	Pro
	Ser	Gly	Gln	Trp	290	Thr	Gln	Ile	Ser	Gly	295	Thr	Tyr	Thr	Ile	Gln	300	Pro	Arg
	Val	Ser	Val	Glu	305	Glu	Leu	Ile	Val	Tyr	310	Phe	Glu	Ala	Lys	Asp	315	Pro	Thr
	Leu	Ala	Phe	Tyr	325	Val	Asp	Asp	Phe	Lys	330	Ile	Thr	Asp	Thr	Thr	335	Thr	Thr
	Asp	Ile	Lys	Leu	340	Glu	Leu	Lys	Pro	Glu	345	Glu	Glu	Glu	Ile	Pro	350	Ala	Lys
	Glu	Val	Leu	Gly	355	Asp	Tyr	Phe	Lys	Val	360	Gly	Val	Ala	Leu	Pro	365	Phe	Lys
	Val	Phe	Ala	Lys	370	Pro	Glu	Asp	Ile	Ala	375	Leu	Ile	Thr	Lys	His	380	Phe	Asn
	Ser	Ile	Thr	Ala	385	Glu	Asn	Glu	Met	Lys	390	Pro	Glu	Ser	Leu	Leu	395	Ala	Gly
	Val	Glu	Asn	Gly	405	Lys	Leu	Lys	Phe	Arg	410	Phe	Glu	Thr	Ala	Asp	415	Lys	Tyr
	Val	Glu	Phe	Ala	420	Gln	Gln	Asn	Gly	Met	425	Val	Val	Arg	Gly	His	430	Thr	Leu
	Val	Trp	His	Asn	435	Gln	Thr	Pro	Asp	Trp	440	Phe	Phe	Lys	Asp	Glu	445	Asn	Gly
	Asn	Leu	Leu	Ser	450	Glu	Ala	Met	Thr	Glu	455	Arg	Leu	Arg	Glu	Tyr	460	Ile	480
	His	Thr	Val	Val	465	Gly	His	Phe	Lys	Gly	470	Lys	Val	Tyr	Ala	Trp	475	Asp	Val
	Val	Asn	Glu	Ala	485	Val	Asp	Pro	Ser	Gln	490	Pro	Asp	Gly	Leu	Arg	495	Arg	Ser
	Ile	Trp	Tyr	Glu	500	Ile	Met	Gly	Pro	Asp	505	Tyr	Ile	Glu	Leu	Ala	510	Phe	Lys
	Phe	Ala	Arg	Glu	515	Ala	Asp	Pro	Asn	Ala	520	Lys	Leu	Phe	Tyr	Asn	525	Asp	Tyr
	Asn	Thr	Tyr	Gln	530	Glu	Lys	Lys	Arg	Asp	535	Ile	Ile	Tyr	Asn	Leu	540	Val	Lys
	Ser	Leu	Lys	Glu	545	Gly	Leu	Ile	Asp	Gly	550	Ile	Gly	Met	Gln	Cys	555	His	560
	Ile	Gly	Val	Gly	565	Thr	Ser	Val	Lys	Glu	570	Ile	Glu	Glu	Ala	Ile	575	Lys	Lys
	Phe	Ser	Thr	Ile	580	Pro	Gly	Ile	Glu	Ile	585	His	Ile	Thr	Glu	Leu	590	Asp	Ile
	Ser	Val	Tyr	Glu	595	Asp	Ala	Thr	Ser	Asn	600	Tyr	Pro	Thr	Pro	Pro	605	Arg	Glu
					610						615						620		

Ala Leu Ile Lys Gln Ala His Val Met Arg Glu Leu Phe Ala Ile Phe
 625 630 635 640
 Lys Lys Tyr Ser Asn Val Ile Thr Asn Val Thr Phe Trp Gly Leu Lys
 645 650 655
 Asp Asp Tyr Ser Trp Lys Asn Ala Arg Asn Asp Trp Pro Leu Leu
 660 665 670
 Phe Asp Lys Asp Tyr Gln Ala Lys Leu Ala Tyr Trp Ala Ile Val Ser
 675 680 685
 Pro Glu Ala Leu Pro Val Leu Pro Lys Lys Trp Ser Ile Ala Thr Gly
 690 695 700
 Ser Ala Leu Val Val Gly Met Met Asp Asp Ser Tyr Leu Ala Ser Ser
 705 710 715 720
 Pro Ile Lys Ile Leu Val Asp Gly Gln Glu Lys Leu Thr Ala Arg Val
 725 730 735
 Ile Trp Glu Glu Asn Lys Leu Phe Val Tyr Ala Glu Val Tyr Asp Arg
 740 745 750
 Thr Arg Asp Lys Gly Lys Asp Gly Ile Thr Ile Phe Val Asp Pro Lys
 755 760 765
 Asn Phe Lys Ala Pro Tyr Leu His Glu Asp Ala Phe Tyr Val Thr Ile
 770 775 780
 Lys Thr Asp Trp Ser Val Glu Lys Ser Arg Asp Asp Ile Glu Val Gln
 785 790 795 800
 Arg Phe Val Gly Pro Ser Gly Val Arg Tyr Asn Val Glu Cys Glu Ile
 805 810 815
 Thr Leu Pro Glu Lys Leu Gln Glu Gly Gln Gln Ile Gly Phe Asp Ile
 820 825 830
 Ala Val Gln Asp Gly Asp Lys Val Tyr Ser Trp Ser Asp Thr Ser Asn
 835 840 845
 Gln Gln Lys Leu Ala Thr Met Asn Tyr Gly Thr Leu Thr Leu Gln Gly
 850 855 860
 Ala Val Met Ala Thr Ala Lys Tyr Gly Thr Pro Val Ile Asp Gly Glu
 865 870 875 880
 Ile Asp Asp Ile Trp Tyr Thr Thr Glu Glu Ile Ser Thr Asp Val Val
 885 890 895
 Val Met Gly Ser Leu Lys Asn Ala Arg Ala Lys Val Arg Val Leu Trp
 900 905 910
 Asp Glu Glu His Leu Tyr Val Leu Ala Ile Val Thr Asp Pro Val Leu
 915 920 925
 Asn Lys Asp Asn Thr Asn Pro Trp Glu Gln Asp Ser Val Glu Ile Phe
 930 935 940
 Ile Asp Glu Asn Asn Ala Lys Thr Pro Tyr Tyr Gln Asp Asp Ala
 945 950 955 960
 Gln Tyr Arg Val Asn Tyr Leu Asn Glu Gln Ser Phe Gly Thr Gly Ala
 965 970 975
 Ser Ser Lys Asn Phe Lys Thr Ala Val Lys Leu Ile Asp Gly Gly Tyr
 980 985 990
 Leu Val Glu Ala Ala Val Lys Trp Lys Thr Ile Lys Pro Ser Pro Asn
 995 1000 1005
 Thr Val Ile Gly Phe Asp Phe Gln Val Asn Asp Ala Asn Ala Gln Gly
 1010 1015 1020
 Lys Arg Val Gly Ile Leu Lys Trp Cys Asp Pro Thr Asp Asn Ser Trp
 1025 1030 1035 1040
 Gln Asn Thr Ser Lys Phe Gly Asn Leu Arg Leu Ile Lys
 1045 1050

<210> 53
 <211> 2370
 <212> DNA
 <213> Bacteria

<400> 53
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 ggtacgcacg cggccccctc gggccgggtac ttccggcacgg ccgtggccgc gggccgcctc 180
 ggcgactcgg cgtacaccgc gatcgccgac cgggagttca acatgatcac cccggagaac 240
 gagatgaagt gggacgccgt cgagccgtcc cgcgccggtt tcgacttcgg tcccgcggac 300
 cggatcgctc agcgtgccct ggcacgcggc cagcgcgtcc gcggccacac cacggtctgg 360
 cactcgcagc tccccctcctg ggtgggctcc atccgcgaca cgaagacgct gcgcggcgtg 420
 atgaaccacc acatcaccac ccagatgacc cactacaagg gcaagatcta cgcctgggac 480

gtggtcaacg	aggccttcgc	cgatggcggc	agcggccggc	tccgcgactc	ggctttccag	540
aaggtgctgg	gcgacggcct	catcgaggag	gcgttccgca	ccgcccgcgc	ggccgacccc	600
tcggccaagc	tctgctacaa	cgactacaac	atcgagaact	ggtcggacgc	caagacccag	660
ggcgtctacc	gcctggtgaa	ggacttcacg	tcccaggcgc	ttcccatcga	ctgcgtcggc	720
ttccagagcc	acttcggcgc	gggcggcccc	ccggcgaact	tcaagacgac	cctggccaac	780
ttcgccgccc	tgggcgtcga	cgtccagatc	accgagctgg	acatcgcccc	ggcatcacct	840
gcccactacg	cgagtgcggt	cagcacctgt	ctgtccgtgg	cccggcgcac	cggcatcacg	900
gtgtggggcg	tccgtgacag	cgactcctgg	cggagcgcgc	aaagcccgcg	gctgttcgac	960
cggaaacggca	agcccaagcc	cgcgtacgcc	gccgtcatga	acgccctcgg	ctccggctcg	1020
ggtcccaccc	cgagcaagcc	ggccgacggg	acggggagcg	gtacggggga	gatcaagggc	1080
gtggcctccg	gcccgtgtct	ggacgtcccc	gcctccacca	ccgccaacgg	cacccgggcg	1140
cagctgtggg	actgtagcgg	ccaggccaac	cagcgcctgga	cccacaccgc	cggcaagcag	1200
ctgaagatcc	acggcgacaa	gtgcctggac	gccaagggga	agggcaccgc	caacggcacc	1260
gcggtggtcg	tctgggactg	caacggcggc	accaaccagc	agtggaaact	ccacaccgac	1320
ggcacgatca	ccggcgtcca	gtccggtctg	tgcctcgaat	ccgtcggcgc	ggccaccgac	1380
aacggcacc	cgatccagct	gcacgcctgt	gggggtgtcg	gcaaccagaa	gtgggtccgc	1440
ccgtccggat	cgggcggcgg	cacgtgcgtg	cttccgtcga	cgtacaagtg	gagctcgacg	1500
ggtgccctgg	cgcagcccaa	ggccgggtgg	gcctcgtcga	aggacttcac	ccatgtggtg	1560
ctgggcggca	agcacctggg	ctacgggtcg	aacttcaacg	gatcgacgta	cggctcgaat	1620
acgttcagcc	ccctcaccac	ctgggtcggc	atggcgctcg	caggacagaa	ggcgatgaag	1680
cagcccgcgg	tcgcacccac	cctgttctac	ttcgcaccca	agaagatctg	ggtgctggcg	1740
taccagtggg	gcaggaccgc	gttctcctac	cggacgtcga	ccgacccac	caaccggaac	1800
ggctggtcgg	cggagcagga	gctcttctcc	ggaagcatca	ccggctcggg	cacgggcccc	1860
atcgaccaga	cgctcatcgg	cgacgggacg	aacatgtacc	tggttctcgc	cgggtgacaac	1920
ggcaagatct	accgggccag	catgccgatc	gggaacttcc	cgggcagctt	cggctcctcg	1980
tacacgacgg	tcatgagcga	caccgcgaag	aacctgttcc	agggcgccga	ggtgtacaag	2040
gtcaaggacc	agaaccagta	cctcatgatc	gtcgaaggcc	ggggcgcggg	cgagcgccgc	2100
tacttccgct	cgttcacggc	ctccagcctg	agcgggtcgt	ggaccccgca	ggccgcgacc	2160
gagagacaac	ccttcgcggg	caaggccaac	agcggcgcca	cctggaccga	cgacatcagc	2220
cacggtgatc	tgatccgcac	caaccccgat	cagaccatga	ccatcgaccc	ctgcaacctt	2280
cagctgctct	accagggcaa	gtccccgcag	gcgggcggac	cctacgacca	gctgccgtac	2340
cggccgggcg	tcctcaccct	gcagcgtcga				2370

<210> 54
 <211> 787
 <212> PRT
 <213> Bacteria

<220>
 <221> SIGNAL
 <222> (1)...(37)

<400> 54
 Met Lys Gly Leu His Arg Leu Arg Arg Arg Arg Thr Trp Val Ala
 1 5 10 15
 Gly Leu Ser Ala Ala Val Val Ala Gly Ala Leu Thr Leu Leu Pro
 20 25 30
 Gly Ser Ala Gly Ala Ala Gly Leu Gly Thr His Ala Ala Pro Ser Gly
 35 40 45
 Arg Tyr Phe Gly Thr Ala Val Ala Ala Gly Arg Leu Gly Asp Ser Ala
 50 55 60
 Tyr Thr Ala Ile Ala Asp Arg Glu Phe Asn Met Ile Thr Pro Glu Asn
 65 70 75 80
 Glu Met Lys Trp Asp Ala Val Glu Pro Ser Arg Gly Arg Phe Asp Phe
 85 90 95
 Gly Pro Ala Asp Arg Ile Val Glu Arg Ala Leu Ala Arg Gly Gln Arg
 100 105 110
 Val Arg Gly His Thr Thr Val Trp His Ser Gln Leu Pro Ser Trp Val
 115 120 125
 Gly Ser Ile Arg Asp Thr Lys Thr Leu Arg Gly Val Met Asn His His
 130 135 140
 Ile Thr Thr Gln Met Thr His Tyr Lys Gly Lys Ile Tyr Ala Trp Asp
 145 150 155 160
 Val Val Asn Glu Ala Phe Ala Asp Gly Gly Ser Gly Arg Leu Arg Asp
 165 170 175
 Ser Val Phe Gln Lys Val Leu Gly Asp Gly Phe Ile Glu Glu Ala Phe
 180 185 190
 Arg Thr Ala Arg Ala Asp Pro Ser Ala Lys Leu Cys Tyr Asn Asp
 195 200 205

Tyr Asn Ile Glu Asn Trp Ser Asp Ala Lys Thr Gln Gly Val Tyr Arg
 210 215 220
 Leu Val Lys Asp Phe Thr Ser Arg Gly Val Pro Ile Asp Cys Val Gly
 225 230 235
 Phe Gln Ser His Phe Gly Ala Gly Gly Pro Ala Ser Phe Lys Thr
 245 250 255
 Thr Leu Ala Asn Phe Ala Ala Leu Gly Val Asp Val Gln Ile Thr Glu
 260 265 270
 Leu Asp Ile Ala Gln Ala Ser Pro Ala His Tyr Ala Ser Ala Val Ser
 275 280 285
 Thr Cys Leu Ser Val Ala Arg Cys Thr Gly Ile Thr Val Trp Gly Val
 290 295 300
 Arg Asp Ser Asp Ser Trp Arg Ser Ala Glu Ser Pro Leu Leu Phe Asp
 305 310 315
 Arg Asn Gly Lys Pro Lys Pro Ala Tyr Ala Ala Val Met Asn Ala Leu
 325 330 335
 Gly Ser Gly Ser Gly Pro Thr Pro Ser Lys Pro Ala Asp Gly Thr Gly
 340 345 350
 Ser Gly Thr Gly Glu Ile Lys Gly Val Ala Ser Gly Arg Cys Leu Asp
 355 360 365
 Val Pro Ala Ser Thr Thr Ala Asn Gly Thr Arg Ala Gln Leu Trp Asp
 370 375 380
 Cys Ser Gly Gln Ala Asn Gln Arg Trp Thr His Thr Ala Gly Lys Gln
 385 390 395
 Leu Lys Ile His Gly Asp Lys Cys Leu Asp Ala Lys Gly Lys Gly Thr
 405 410 415
 Ala Asn Gly Thr Ala Val Val Val Trp Asp Cys Asn Gly Gly Thr Asn
 420 425 430
 Gln Gln Trp Asn Val His Thr Asp Gly Thr Ile Thr Gly Val Gln Ser
 435 440 445
 Gly Leu Cys Leu Asp Ala Val Gly Ala Ala Thr Ala Asn Gly Thr Pro
 450 455 460
 Ile Gln Leu His Ala Cys Gly Gly Val Gly Asn Gln Lys Trp Ser Ala
 465 470 475
 Pro Ser Gly Ser Gly Gly Thr Cys Val Leu Pro Ser Thr Tyr Lys
 485 490 495
 Trp Ser Ser Thr Gly Ala Leu Ala Gln Pro Lys Ala Gly Trp Ala Ser
 500 505 510
 Leu Lys Asp Phe Thr His Val Val Leu Gly Gly Lys His Leu Val Tyr
 515 520 525
 Gly Ser Asn Phe Asn Gly Ser Thr Tyr Gly Ser Met Thr Phe Ser Pro
 530 535 540
 Phe Thr Thr Trp Ser Asp Met Ala Ser Ala Gly Gln Lys Ala Met Lys
 545 550 555
 Gln Pro Ala Val Ala Pro Thr Leu Phe Tyr Phe Ala Pro Lys Lys Ile
 565 570 575
 Trp Val Leu Ala Tyr Gln Trp Gly Arg Thr Ala Phe Ser Tyr Arg Thr
 580 585 590
 Ser Thr Asp Pro Thr Asn Pro Asn Gly Trp Ser Ala Glu Gln Glu Leu
 595 600 605
 Phe Ser Gly Ser Ile Thr Gly Ser Gly Thr Gly Pro Ile Asp Gln Thr
 610 615 620
 Leu Ile Gly Asp Gly Thr Asn Met Tyr Leu Phe Phe Ala Gly Asp Asn
 625 630 635
 Gly Lys Ile Tyr Arg Ala Ser Met Pro Ile Gly Asn Phe Pro Gly Ser
 645 650 655
 Phe Gly Ser Ser Tyr Thr Thr Val Met Ser Asp Thr Ala Lys Asn Leu
 660 665 670
 Phe Glu Ala Pro Gln Val Tyr Lys Val Lys Asp Gln Asn Gln Tyr Leu
 675 680 685
 Met Ile Val Glu Ala Arg Gly Ala Gly Glu Arg Arg Tyr Phe Arg Ser
 690 695 700
 Phe Thr Ala Ser Ser Leu Ser Gly Ala Trp Thr Pro Gln Ala Ala Thr
 705 710 715
 Glu Ser Asn Pro Phe Ala Gly Lys Ala Asn Ser Gly Ala Thr Trp Thr
 725 730 735
 Asp Asp Ile Ser His Gly Asp Leu Ile Arg Thr Asn Pro Asp Gln Thr
 740 745 750
 Met Thr Ile Asp Pro Cys Asn Leu Gln Leu Leu Tyr Gln Gly Lys Ser

755
 Pro Gln Ala Gly Gly Pro Tyr Asp Gln Leu Pro Tyr Arg Pro Gly Val
 770 775 780
 Leu Thr Leu
 785

<210> 55
 <211> 1143
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 55
 atgaaaaaaa cgattgcaca tttcacctta tggatagcgt tttttctctt cacttcctgt 60
 gctgttacgg cgcagaagaa tactaagaat gcaagagtaa agcccactac tctaaaagag 120
 gcttaccaag gtaaatctta tatcgggtaca gcgatgaatc tgagacagat tcacggagat 180
 gatccccagt ctgaaaatat tatcaaaaaa cagttcaatt ccattgttgc tgaaaactgc 240
 atgaagagta tgtatcttca gccggaggaa ggaaaatttt tcttcgatga tgcggataag 300
 tttgtggatt ttgggtcttca gaacaatatg tttattatcg ggcattgtct gatttggcat 360
 tcgcaggcgc caaatgggtt tttcacccgac gagaatggga aaacgggtct cccagaagtt 420
 cttaaacaaa ggatgaaagc tcatatcacc gccgtcgttt ctgctacaa agggaaaatc 480
 aaaggatggg atgtgggtgaa cgaagccatt atggaagatg gttcttaccg caaaagcaaa 540
 tttttacgaga ttttggggaga agaattttatt ccgttggcat ttcagtatgc gcatgaagca 600
 gatcctgatg cagaactcta ttacaacgat tataacgaat ggtatccccg aaaaagagct 660
 acgggtgacca aaataatccg agattttcaa tctagaggaa tccgcattga tgccattgga 720
 atgcaggctc atttcgggat ggattcaccc actatagaag agtatgaaca aactattcag 780
 ggctatatata aagaaggcgt gaaagtcaat attacggaac tcgatttgag tccacttcct 840
 tcccccttggg gaacttccgc caacgttgcc gatacgagc agtatcagga aaaaatgaat 900
 ccttacacca aaggacttcc cacagagggtg gaaaaagctt gggaaaaccg ttatctcgat 960
 tttttcaaac tattcctaaa atatcatcag catatcgagc gtgttacgtt ttggggcggt 1020
 agcgatatcg attcctggaa gaacgatttt ccagtgaag gacgtaccga ttatccgtta 1080
 cccitttgacc gacagtatca ggcaaaacct ttgggttcaga aattaataga cttaacgaaa 1140
 tag 1143

<210> 56
 <211> 380
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(24)

<400> 56
 Met Lys Lys Thr Ile Ala His Phe Thr Leu Trp Ile Ala Phe Phe Leu
 1 5 10 15
 Phe Thr Ser Cys Ala Val Thr Ala Gln Lys Asn Thr Lys Asn Ala Arg
 20 25 30
 Val Lys Pro Thr Thr Leu Lys Glu Ala Tyr Gln Gly Lys Phe Tyr Ile
 35 40 45
 Gly Thr Ala Met Asn Leu Arg Gln Ile His Gly Asp Asp Pro Gln Ser
 50 55 60
 Glu Asn Ile Ile Lys Lys Gln Phe Asn Ser Ile Val Ala Glu Asn Cys
 65 70 75 80
 Met Lys Ser Met Tyr Leu Gln Pro Glu Glu Gly Lys Phe Phe Phe Asp
 85 90 95
 Asp Ala Asp Lys Phe Val Asp Phe Gly Leu Gln Asn Asn Met Phe Ile
 100 105 110
 Ile Gly His Cys Leu Ile Trp His Ser Gln Ala Pro Lys Trp Phe Phe
 115 120 125
 Thr Asp Glu Asn Gly Lys Thr Val Ser Pro Glu Val Leu Lys Gln Arg
 130 135 140
 Met Lys Ala His Ile Thr Ala Val Val Ser Arg Tyr Lys Gly Lys Ile
 145 150 155 160
 Lys Gly Trp Asp Val Val Asn Glu Ala Ile Met Glu Asp Gly Ser Tyr

Arg Lys Ser Lys Phe Tyr Glu Ile Leu Gly Glu Glu Phe Ile Pro Leu
 165 170 175
 Ala Phe Gln Tyr Ala His Glu Ala Asp Pro Asp Ala Glu Leu Tyr Tyr
 180 185 190
 Asn Asp Tyr Asn Glu Trp Tyr Pro Gly Lys Arg Ala Thr Val Thr Lys
 195 200 205
 Ile Ile Arg Asp Phe Lys Ser Arg Gly Ile Arg Ile Asp Ala Ile Gly
 210 215 220 225 230 235 240
 Met Gln Ala His Phe Gly Met Asp Ser Pro Thr Ile Glu Glu Tyr Glu
 245 250 255
 Gln Thr Ile Gln Gly Tyr Ile Lys Glu Gly Val Lys Val Asn Ile Thr
 260 265 270
 Glu Leu Asp Leu Ser Pro Leu Pro Ser Pro Trp Gly Thr Ser Ala Asn
 275 280 285
 Val Ala Asp Thr Gln Gln Tyr Gln Glu Lys Met Asn Pro Tyr Thr Lys
 290 295 300
 Gly Leu Pro Thr Glu Val Glu Lys Ala Trp Glu Asn Arg Tyr Leu Asp
 305 310 315 320
 Phe Phe Lys Leu Phe Leu Lys Tyr His Gln His Ile Glu Arg Val Thr
 325 330 335
 Phe Trp Gly Val Ser Asp Ile Asp Ser Trp Lys Asn Asp Phe Pro Val
 340 345 350
 Arg Gly Arg Thr Asp Tyr Pro Leu Pro Phe Asp Arg Gln Tyr Gln Ala
 355 360 365
 Lys Pro Leu Val Gln Lys Leu Ile Asp Leu Thr Lys
 370 375 380

<210> 57
 <211> 1578
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 57
 atgaaaagaa tgatcggttt gctgctggcc atttgcctgg tgatgacgct ggctggggcc 60
 tgggctgcct cggatacgct ggtctatgca tccagtttcg cagcgggcca tgacgactgg 120
 tttgcaagg ggcgttcccg ggtttaccat accacggagg cgacgctgcg gacggaaggc 180
 cggagcgaca actggaattc tccgggacgc tattttgaac tggtgccgga taatgaatat 240
 acgctgagcg tggaggtcta ccaggacgga gcggacagcg cgaacttcac gatttccctg 300
 gaaaagggtt cggatgggat caccggatgg gaaaacctgg tgcggggaac cgtgaaaaag 360
 ggtgaatgga cgacgctgtc cggaacctat acttttgcag actatgaaag ctatgtgctg 420
 tatgtggaga cctccgacgc gccgacgctg gactttgaga tccggaattt ccgggtggaa 480
 agccccaatg ggatcccgga gccgaaggct accgagcgcc cggcagtggt ttcggaagcc 540
 acggatattc cgagcctgaa ggacgcttac gcggattact tgcactttgg cgcggccgtg 600
 ccgcagctct ctttcaccag cagagataat attcagctga tggagctgat gaaaaaccag 660
 ttcagcatcc tgacgcctga aaatgagctg aagccggaca gtgtattgga tgtaagcgcc 720
 agcaagcagc tggccaaaga ggaatgaaac gcggtagtgg tgcggtttaa cggggcaaaag 780
 tcattgctgc ggtttgcccc gcaaaacggc atcaagggtg acgggcatgt gctggtctgg 840
 cacagccaga cgccggaagc ctttttccat gaaggatat atcccaagaa cccgctgggtg 900
 agccgggaag tgatgctggg acggctggaa aactatatcc gggaagtgtc gaccagacg 960
 gaagaactgt atccgggctg gatcgtcagc tgggacgtgg tgaacgaagc gattgacgac 1020
 ggaaccaact ggatccggaa gggatcgggc tggtagcgga ccatcgggga agactatgtg 1080
 gagaaggctt ttgagtttgc ccggaagtat gccccggaag gcgtgctgct gtactacaac 1140
 gattacaaca cggcatacgc cggaaaactg aatgggatta tcaaactgat caaaccatg 1200
 atcgagcagg gaacgatcga cggatacggc ttccagatgc accatacgac cgggcagccc 1260
 agcaaccaga tgatcaccac ggcggtggag aagatcgcgg ccctgggaat caagctgcgg 1320
 gtcagcgaga tggacatcgg gattacaaag tatacagaga cgagcctgca ggcacaaaag 1380
 gacaagtaca aggcgatgat ggaactgatg ctgcggttcg cggaccagac ggaagcagtg 1440
 caggtctggg ggattacgga tacgatgagc tggcggagct ccagctatcc gctgctgttt 1500
 gaccggagca ggaatccgaa gccggcgctt tatggcgtga ttgaagcggg tgaagactgg 1560
 acagggaaaa gtgaatag 1578

<210> 58
 <211> 525
 <212> PRT
 <213> Unknown

<220>

<223> obtained from an environmental sample

<221> SIGNAL

<222> (1)...(22)

<400> 58

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Met Lys Arg Met Ile Gly Leu Leu Leu Ala Ile Cys Leu Val Met Thr
1      5      10      15
Leu Ala Gly Ala Trp Ala Ala Ser Asp Thr Leu Val Tyr Ala Ser Ser
20      25      30
Phe Ala Ala Gly Asp Asp Asp Trp Phe Ala Arg Gly Ala Ser Arg Val
35      40      45
Tyr His Thr Thr Glu Ala Thr Leu Arg Thr Glu Gly Arg Ser Asp Asn
50      55      60
Trp Asn Ser Pro Gly Arg Tyr Phe Glu Leu Val Pro Asp Asn Glu Tyr
65      70      75      80
Thr Leu Ser Val Glu Val Tyr Gln Asp Gly Ala Asp Ser Ala Asn Phe
85      90      95
Met Ile Ser Leu Glu Lys Val Ala Asp Gly Ile Thr Gly Trp Glu Asn
100      105      110
Leu Val Arg Gly Thr Val Lys Lys Gly Glu Trp Thr Thr Leu Ser Gly
115      120      125
Thr Tyr Thr Phe Ala Asp Tyr Glu Ser Tyr Val Leu Tyr Val Glu Thr
130      135      140
Ser Asp Ala Pro Thr Leu Asp Phe Glu Ile Arg Asn Phe Arg Val Glu
145      150      155      160
Ser Pro Asn Gly Ile Pro Glu Pro Lys Ala Thr Glu Ala Pro Ala Val
165      170      175
Val Ser Glu Ala Thr Asp Ile Pro Ser Leu Lys Asp Ala Tyr Ala Asp
180      185      190
Tyr Phe Asp Phe Gly Ala Ala Val Pro Gln Ser Ala Phe Thr Ser Arg
195      200      205
Asp Asn Ile Gln Leu Met Glu Leu Met Lys Asn Gln Phe Ser Ile Leu
210      215      220
Thr Pro Glu Asn Glu Leu Lys Pro Asp Ser Val Leu Asp Val Ser Ala
225      230      235      240
Ser Lys Gln Leu Ala Lys Glu Asp Glu Thr Ala Val Val Val Arg Phe
245      250      255
Asn Gly Ala Lys Ser Leu Leu Arg Phe Ala Gln Gln Asn Gly Ile Lys
260      265      270
Val His Gly His Val Leu Val Trp His Ser Gln Thr Pro Glu Ala Phe
275      280      285
Phe His Glu Gly Tyr Asp Pro Lys Asn Pro Leu Val Ser Arg Glu Val
290      295      300
Met Leu Gly Arg Leu Glu Asn Tyr Ile Arg Glu Val Leu Thr Gln Thr
305      310      315      320
Glu Glu Leu Tyr Pro Gly Val Ile Val Ser Trp Asp Val Val Asn Glu
325      330      335
Ala Ile Asp Asp Gly Thr Asn Trp Ile Arg Lys Gly Ser Gly Trp Tyr
340      345      350
Arg Thr Ile Gly Glu Asp Tyr Val Glu Lys Ala Phe Glu Phe Ala Arg
355      360      365
Lys Tyr Ala Pro Glu Gly Val Leu Leu Tyr Tyr Asn Asp Tyr Asn Thr
370      375      380
Ala Tyr Ala Gly Lys Leu Asn Gly Ile Ile Lys Leu Ile Lys Pro Met
385      390      395      400
Ile Glu Gln Gly Thr Ile Asp Gly Tyr Gly Phe Gln Met His His Thr
405      410      415
Thr Gly Gln Pro Ser Asn Gln Met Ile Thr Thr Ala Val Glu Lys Ile
420      425      430
Ala Ala Leu Gly Ile Lys Leu Arg Val Ser Glu Met Asp Ile Gly Ile
435      440      445
Thr Lys Tyr Thr Glu Thr Ser Leu Gln Ala Gln Lys Asp Lys Tyr Lys
450      455      460
Ala Met Met Glu Leu Met Leu Arg Phe Ala Asp Gln Thr Glu Ala Val
465      470      475      480
Gln Val Trp Gly Ile Thr Asp Thr Met Ser Trp Arg Ser Ser Ser Tyr

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485 490 495
 Pro Leu Leu Phe Asp Arg Ser Arg Asn Pro Lys Pro Ala Phe Tyr Gly
 500 505 510
 Val Ile Glu Ala Val Glu Asp Trp Thr Gly Lys Ser Glu
 515 520 525

<210> 59
 <211> 1104
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 59
 atgcttgcca gtagtgccgg tttggtagca tcccaactca agctgtccgc gttagctgca 60
 gctaaaaatg ctggattaaa agatgtatat aaggatcgct ttctgattgg tgcagcaatt 120
 aatacctcga ttgcgagcgg ccagcaacct gatattacag aaattatcaa gcgtgatttt 180
 tcgtcgttaa cacctgaaaa tgcaatgaag tgggaatctg tcaggactgc tgatggcggg 240
 tggaaatggg cagatgccga tcaattcgtt acgtttgcaa cagaacacaa aatacacgct 300
 gttggccaca cccttgccctg gcatagccag attcccgaatt ccgtattcaa aaatgaaaaa 360
 ggcgaataca taaaatccac cgagctatca aaaaaaatgg aagaacatat cactacgatt 420
 gtaggtagat ataaaggcaa actcgatgcc tgggatgtag ttaatgaggc tgttggtgat 480
 gataatcaaa tgcgcaaaag ccattattac aatatttctcg gcgaagattt tattgataag 540
 gcatttcacc ttgcgcatga ggtcgatccc aaagcgcatt taatgtataa cgactacaac 600
 attgaaaaag atggcaagcg tgaagctacc cttgaaatgt taaagcgttt acaaaaacgc 660
 ggtgtaccga ttcattgggct cggcatccag ggacatatgg ccgttgatgg ccccgacatt 720
 gcggatattg aaaaaagtat tttggcttat gcggatttgg gtttgcgtgt acatttcacc 780
 gagttggata ttgatgtatt gccgcaaatt tgggaacttac cggttgcaga aattttctaca 840
 cgcttcgaat acaaacctga gcgagatcct ttcaaaaatg gtttatcaaa agaaatgaac 900
 gataaactca gtgcacgcta tgaagaatta ttcacattat ttattaaaca caaagataaa 960
 attgatcgta ttactttgtg ggggtgtcagc gatgatgcaa cctggctaaa tgatttcccc 1020
 atcaaaggca gaaccagtta tccattattg tttgatcgca agcatcaacc aaaagatgct 1080
 tattataaca ttctggcgtt gtga 1104

<210> 60
 <211> 367
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(21)

<400> 60
 Met Leu Ala Ser Ser Ala Gly Leu Val Ala Ser Gln Leu Lys Leu Ser
 1 5 10 15
 Ala Leu Ala Ala Lys Asn Ala Gly Leu Lys Asp Val Tyr Lys Asp
 20 25 30
 Arg Phe Leu Ile Gly Ala Ala Ile Asn Thr Ser Ile Ala Ser Gly Gln
 35 40 45
 Gln Pro Asp Ile Thr Glu Ile Ile Lys Arg Asp Phe Ser Ser Leu Thr
 50 55 60
 Pro Glu Asn Ala Met Lys Trp Glu Ser Val Arg Thr Ala Asp Gly Gly
 65 70 75 80
 Trp Lys Trp Ala Asp Ala Asp Gln Phe Val Thr Phe Ala Thr Glu His
 85 90 95
 Lys Ile His Ala Val Gly His Thr Leu Ala Trp His Ser Gln Ile Pro
 100 105 110
 Asp Ser Val Phe Lys Asn Glu Lys Gly Glu Tyr Ile Lys Ser Thr Glu
 115 120 125
 Leu Ser Lys Lys Met Glu Glu His Ile Thr Thr Ile Val Gly Arg Tyr
 130 135 140
 Lys Gly Lys Leu Asp Ala Trp Asp Val Val Asn Glu Ala Val Gly Asp
 145 150 155 160
 Asp Asn Gln Met Arg Lys Ser His Tyr Tyr Asn Ile Leu Gly Glu Asp
 165 170 175

Phe Ile Asp Lys Ala Phe His Leu Ala His Glu Val Asp Pro Lys Ala
 180 185 190
 His Leu Met Tyr Asn Asp Tyr Asn Ile Glu Lys Asp Gly Lys Arg Glu
 195 200 205
 Ala Thr Leu Glu Met Leu Lys Arg Leu Gln Lys Arg Gly Val Pro Ile
 210 215 220
 His Gly Leu Gly Ile Gln Gly His Ile Ala Val Asp Gly Pro Ser Ile
 225 230 235 240
 Ala Asp Ile Glu Lys Ser Ile Leu Ala Tyr Ala Asp Leu Gly Leu Arg
 245 250 255
 Val His Phe Thr Glu Leu Asp Ile Asp Val Leu Pro Gln Ile Trp Asn
 260 265 270
 Leu Pro Val Ala Glu Ile Ser Thr Arg Phe Glu Tyr Lys Pro Glu Arg
 275 280 285
 Asp Pro Phe Lys Asn Gly Leu Ser Lys Glu Met Asn Asp Lys Leu Ser
 290 295 300
 Ala Arg Tyr Glu Glu Leu Phe Thr Leu Phe Ile Lys His Lys Asp Lys
 305 310 315 320
 Ile Asp Arg Ile Thr Leu Trp Gly Val Ser Asp Asp Ala Thr Trp Leu
 325 330 335
 Asn Asp Phe Pro Ile Lys Gly Arg Thr Ser Tyr Pro Leu Leu Phe Asp
 340 345 350
 Arg Lys His Gln Pro Lys Asp Ala Tyr Tyr Asn Ile Leu Ala Leu
 355 360 365

<210> 61
 <211> 1041
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 61
 atgagaagaa gcatggaaag gctgcccgaag ctccatgaag cttacggcaa tagtttcaag 60
 atcggcgctg ccgtgaatcc aattacgatg gtgacccaaa aggaattgtt gtcacaccac 120
 ttcaacagcg ttacggcaga aaatgaaatg aaattcgagc gattgcaccc atcgggaagag 180
 gtgtatacat tcgagcaagc cgaccagatc gtatcgtttg ccaaatacgaa cggaaatgtcg 240
 gtgagaggac ataccctcgt atggcataat cagacgccgg aatgggtgtt tcaagacagt 300
 tccggtggga cagccggcgg cgagctgctg ctgctcgga tgaaatcgca catcgatgag 360
 gtcgttggcc gttatcgcg agatatctat gcttgggatg tcgtaaacga agccattgcc 420
 gacagtggaa gcgatctgct tcgttcctcc ccgtggcttg cgtcgatcgg ggaggatttt 480
 atcgccaagg ctttcgaata tgcgcacgaa gcagaccgcg aagcgtgctg gttttataac 540
 gattacaacg aatccgtgcc cgagaagcgg gagaagattt acacgctcct taaatcgta 600
 aaggagcagg atgtgccgat tcacggcgctc gggcttcagg cccattggaa tttggagttt 660
 ccatacgctt acgatatccg cagggcaatc gaaaggatat caagccttgg catgatcttg 720
 catatcacgg agcttgacgt atccgtattc gcgcatgagg ataagcggac cgatctggcg 780
 gcgcccagcg aagaaatgct tgagcgccag gcggagcgtt acggtcaatt gttccgtctg 840
 cttaaagagt acagcggcag cgtcacttcc gtgaccttct ggggagcggc ggacgattat 900
 acctggcttg atcattttcc ggtaaggggc cgcaaaaatt ggccgttcgt cttcgacgag 960
 aaccatcttc cgaaggaatc ctattggaac ctgttgaagg aagccaatcc cgaaagaaca 1020
 ttccaagaga tacgttcgta a 1041

<210> 62
 <211> 346
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 62
 Met Arg Arg Ser Met Glu Arg Leu Pro Lys Leu His Glu Ala Tyr Gly
 1 5 10 15
 Asn Ser Phe Lys Ile Gly Ala Ala Val Asn Pro Ile Thr Met Val Thr
 20 25 30
 Gln Lys Glu Leu Leu Ser His His Phe Asn Ser Val Thr Ala Glu Asn
 35 40 45
 Glu Met Lys Phe Glu Arg Leu His Pro Ser Glu Glu Val Tyr Thr Phe

50	55	60
Glu Gln Ala Asp Gln Ile Val Ser Phe Ala Lys Ser Asn Gly Met Ser		
65 Val Arg Gly His Thr 70 Leu Val Trp His Asn Gln Thr Pro Glu Trp Val		80
Phe Gln Asp Ser Ser Gly Gly Thr Ala Gly Arg Glu Leu Leu Leu Ala		95
Arg Met Lys Ser His Ile Asp Glu Val Val Gly Arg Tyr Arg Gly Asp		110
Ile Tyr Ala Trp Asp Val Val Asn Glu Ala Ile Ala Asp Ser Gly Ser		125
Asp Leu Leu Arg Ser Ser Pro Trp Leu Ala Ser Ile Gly Glu Asp Phe		140
Ile Ala Lys Ala Phe 150 Glu Tyr Ala His Glu Ala Asp Pro Gln Ala Leu		155
Leu Phe Tyr Asn Asp Tyr Asn Glu Ser Val Pro Glu Lys Arg Glu Lys		170
Ile Tyr Thr 180 Leu Leu Lys Ser Leu Lys Glu Gln Asp Val Pro Ile His		185
Gly Val Gly Leu Gln Ala His Trp Asn Leu Glu Phe Pro Ser Leu Asp		200
Asp Ile Arg Arg Ala Ile Glu Arg Tyr Ala Ser Leu Gly Met Ile Leu		215
His Ile Thr Glu Leu Asp Val Ser Val Phe Ala His Glu Asp Lys Arg		230
Thr Asp Leu Ala Ala Pro Thr Glu Glu Met Leu Glu Arg Gln Ala Glu		245
Arg Tyr Gly Gln Leu Phe Arg Leu Leu Lys Glu Tyr Ser Gly Ser Val		260
Thr Ser Val Thr Phe Trp Gly Ala Ala Asp Asp Tyr Thr Trp Leu Asp		275
His Phe Pro Val Arg Gly Arg Lys Asn Trp Pro Phe Val Phe Asp Glu		290
Asn His Leu Pro Lys Glu Ser Tyr Trp Asn Leu Leu Lys Glu Ala Asn		305
Pro Glu Arg Thr Phe Gln Glu Ile Arg Ser		320
		335
		345

<210> 63
 <211> 1110
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 63						60
atgaaacgaa	ttttaattgg	tttggcggct	cttaccgctt	ccgggctgtc	ggcgcagaaa	120
tccgacggtg	ctttaaaaaa	agcatttcag	gataaattct	atatcgggac	tgcatgagt	180
cttcctcaga	ttgatgggac	agataaaaaga	gcggtagcca	ttatcagaaa	tcagttcagt	240
tctattgttg	ctgaaaactg	tatgaaatcg	atgtttctgc	aacctcagga	aggaaagttc	300
ttctttgatg	acgctgataa	atttgttgat	ttcgggatga	aaaacaatat	gttcgtcatc	360
ggacatacgc	taatctggca	ttcccagctt	ccaaaatggt	tttttacaga	taaaaatgga	420
aaagatgttt	ctccggaagt	attgaaacag	cgcataaaaa	accacattac	aaccgtagtt	480
tcccgttaca	aaggaaaaagt	aaaaggatgg	gatgtggtga	atgaagccat	tcttgaagac	540
ggaacctata	gaaaaagtaa	attttacgaa	atttctgggtg	aagattttat	tcctttggcg	600
tttcagtatg	cacaggaagc	cgatcccaat	gcagaattat	attacaacga	ttataatgaa	660
tggtatccgg	aaaaggtaaa	agcagtcatt	acaatgggtg	aaaagcttaa	atcaagagga	720
atccgtattg	atggagtagg	aatgcaggcc	catgtcggaa	tggaatccc	ttccatcaat	780
gaatatgaaa	aagcaattct	ggcgtattcc	aatgccggag	ttaaagttaa	tattacggag	840
ctggaaatta	gtgcgctgcc	ttctccgtgg	ggaagctctg	ccaatgtttc	agataccggt	900
gcctatcaga	aagaaatgaa	tccttacacc	aaagggcttc	ccaatgaagt	agaagcgaaa	960
tgggaaaaaa	gttaccttga	tttcttttagc	ttgttttttaa	aacataaaga	taaaataaga	1020
agggtgacct	tatggggagt	tactgataag	cagtcctgga	aaaacgattt	tccggtaaaa	1080
ggaagaacag	attacccggt	gctgtttgac	aggaaagatc	aggagaaacc	tgtagtacaa	1110
aaaataataa	aattggcaga	gaaaaattaa				

<210> 64
 <211> 369

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample

<221> SIGNAL

<222> (1)...(20)

<400> 64

Met Lys Arg Ile Leu Ile Gly Leu Ala Ala Leu Thr Ala Ser Gly Leu
 1 5 10 15
 Ser Ala Gln Lys Ser Asp Gly Thr Leu Lys Lys Ala Phe Gln Asp Lys
 20 25 30
 Phe Tyr Ile Gly Thr Ala Met Ser Pro Gln Ile Asp Gly Thr Asp
 35 40 45
 Lys Arg Ala Val Ala Ile Ile Arg Asn Gln Phe Ser Ser Ile Val Ala
 50 55 60
 Glu Asn Cys Met Lys Ser Met Phe Leu Gln Pro Gln Glu Gly Lys Phe
 65 70 75 80
 Phe Phe Asp Asp Ala Asp Lys Phe Val Asp Phe Gly Met Lys Asn Asn
 85 90 95
 Met Phe Val Ile Gly His Thr Leu Ile Trp His Ser Gln Leu Pro Lys
 100 105 110
 Trp Phe Phe Thr Asp Lys Asn Gly Lys Asp Val Ser Pro Glu Val Leu
 115 120 125
 Lys Gln Arg Met Lys Asn His Ile Thr Thr Val Val Ser Arg Tyr Lys
 130 135 140
 Gly Lys Val Lys Gly Trp Asp Val Val Asn Glu Ala Ile Leu Glu Asp
 145 150 155 160
 Gly Thr Tyr Arg Lys Ser Lys Phe Tyr Glu Ile Leu Gly Glu Asp Phe
 165 170 175
 Ile Pro Leu Ala Phe Gln Tyr Ala Gln Glu Ala Asp Pro Asn Ala Glu
 180 185 190
 Leu Tyr Tyr Asn Asp Tyr Asn Glu Trp Tyr Pro Glu Lys Val Lys Ala
 195 200 205
 Val Ile Thr Met Val Glu Lys Leu Lys Ser Arg Gly Ile Arg Ile Asp
 210 215 220
 Gly Val Gly Met Gln Ala His Val Gly Met Asp Ile Pro Ser Ile Asn
 225 230 235 240
 Glu Tyr Glu Lys Ala Ile Leu Ala Tyr Ser Asn Ala Gly Val Lys Val
 245 250 255
 Asn Ile Thr Glu Leu Glu Ile Ser Ala Leu Pro Ser Pro Trp Gly Ser
 260 265 270
 Ser Ala Asn Val Ser Asp Thr Val Ala Tyr Gln Lys Glu Met Asn Pro
 275 280 285
 Tyr Thr Lys Gly Leu Pro Asn Glu Val Glu Ala Lys Trp Glu Lys Arg
 290 295 300
 Tyr Leu Asp Phe Phe Ser Leu Phe Leu Lys His Lys Asp Lys Ile Arg
 305 310 315 320
 Arg Val Thr Leu Trp Gly Val Thr Asp Lys Gln Ser Trp Lys Asn Asp
 325 330 335
 Phe Pro Val Lys Gly Arg Thr Asp Tyr Pro Leu Leu Phe Asp Arg Lys
 340 345 350
 Asp Gln Glu Lys Pro Val Val Gln Lys Ile Ile Lys Leu Ala Glu Lys
 355 360 365
 Asn

<210> 65

<211> 1557

<212> DNA

<213> unknown

<220>

<223> Obtained from an environmental sample

<400> 65

atgaaaagaa tcggactgtt gctgctggct gtgatcatgc ttgtgggctg tgtatatcc

60

gcggcgccg	aggatacgt	ggtttatgct	tccacttttg	tggccggaac	ggacggatgg	120
tacgcccgcg	gagcgcagaa	agtataccgc	acaaccgagg	agacactgcg	gacggaaggc	180
cggaccagcg	actggcattc	cccgggccgt	gattttgacc	tggtggaagg	cggcgtctat	240
gtcctgagcg	tggaagtgtt	ccaggacgaa	gcggaacaacg	ccagcttcat	gatttccatc	300
gcccacagca	aggacggtag	ggaacacctat	gaaaacctgg	ctcgcggaac	cgccaaacgc	360
ggcgagtggg	tcaccctgac	cggaaacatat	accgccggca	attttgaccg	gaacgtcctg	420
tatgtggaaa	cgaccggatc	gccggaactg	agctatgaaa	tccggaattt	ccgggttgaa	480
gcgccgaacg	gagttccgga	gccgaaggct	acggagcccc	cgatggtgat	tgaggcgggtg	540
gagaacctcc	cgggcctgaa	gaacgcgtat	gcgggaaaaat	ttgatttcgg	cgcggcgggtt	600
ccgggatacg	ctttcggcga	tccgggcctg	aaacagctga	tgactgagca	gttcagcatc	660
ctgacgcccg	aaaacgaact	gaaaccggac	gctgtgctgg	acgtggcggc	gagcaagcgg	720
ctggcccagg	aggatgaaac	ggcgggtggcg	gttcattttg	acggcgccat	tccgctgctg	780
aactttgccc	gggacaacgg	catcagggtg	cacggacatg	tgctgatctg	gcacagccag	840
acgcgggaag	cgttcttcca	tgagggttat	gacacctcca	agccccctgg	cagccgggaa	900
gtgatgtcgg	cgcggatgga	aaactatatc	cgcgaggtgc	tgacctggac	gaacgagaat	960
tatccgggcg	tgatcgtatc	ctgggacgtg	gtgaacgaag	ccattgatga	cggaacgaac	1020
tggctgcgga	attccaactg	gtacaagacg	gtgggcgggcg	actttgtgaa	ccgggctttt	1080
gaatttgccc	gcatgtacgc	ggcggacggc	gtcctcctgt	attacaatga	ttacaatacc	1140
gcctatccgg	ccaaacggaa	gggaatcatc	aagctgctgg	gccagctgat	tgagggaaggc	1200
aatatgtacg	gatacggctt	ccagatgcac	cacagcaccg	gcgagccttc	catggagatg	1260
atcaccgctt	cgggtggagga	aatcgccgcg	ctgggaataa	aactgcgggt	cagcgagctg	1320
gatgtgggca	tgggcagcag	catgacggaa	gaagccctga	tgaacagaa	ggacaaatac	1380
aaggcggtca	tggaaactgat	gctgcgggtt	ggcgaccaga	cggagcggt	gcaggtatgg	1440
ggactgacgg	acaatatgag	ctggcggaac	ggccagaaac	cgctgctgtt	tgaccggaac	1500
cggaaaccga	agccgcctt	cttcggcgctc	ctggaagcgg	cggagaaag	caaataa	1557

<210> 66
 <211> 518
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(22)

<400> 66
 Met Lys Arg Ile Gly Leu Leu Leu Leu Ala Val Ile Met Leu Val Gly
 1 5 10 15
 Cys Val Tyr Ser Ala Ala Ala Glu Asp Thr Leu Val Tyr Ala Ser Thr
 20 25 30
 Phe Val Ala Gly Thr Asp Gly Trp Tyr Ala Arg Gly Ala Gln Lys Val
 35 40 45
 Tyr Arg Thr Thr Glu Glu Thr Leu Arg Thr Glu Gly Arg Thr Ser Asp
 50 55 60
 Trp His Ser Pro Gly Arg Asp Phe Asp Leu Val Glu Gly Gly Val Tyr
 65 70 75 80
 Val Leu Ser Val Glu Val Phe Gln Asp Glu Ala Asp Asn Ala Ser Phe
 85 90 95
 Met Ile Ser Ile Ala His Ser Lys Asp Gly Thr Glu Thr Tyr Glu Asn
 100 105 110
 Leu Ala Arg Gly Thr Ala Lys Arg Gly Glu Trp Val Thr Leu Thr Gly
 115 120 125
 Thr Tyr Thr Ala Gly Asn Phe Asp Arg Asn Val Leu Tyr Val Glu Thr
 130 135 140
 Thr Gly Ser Pro Glu Leu Ser Tyr Glu Ile Arg Asn Phe Arg Val Glu
 145 150 155 160
 Ala Pro Asn Gly Val Pro Glu Pro Lys Ala Thr Glu Pro Pro Met Val
 165 170 175
 Ile Glu Ala Val Glu Asn Leu Pro Gly Leu Lys Asn Ala Tyr Ala Gly
 180 185 190
 Lys Phe Asp Phe Gly Ala Ala Val Pro Gly Tyr Ala Phe Gly Asp Pro
 195 200 205
 Gly Leu Lys Gln Leu Met Thr Glu Gln Phe Ser Ile Leu Thr Pro Glu
 210 215 220
 Asn Glu Leu Lys Pro Asp Ala Val Leu Asp Val Ala Ala Ser Lys Arg
 225 230 235 240
 Leu Ala Gln Glu Asp Glu Thr Ala Val Ala Val His Phe Asp Gly Ala

Ile Pro Leu Leu Asn Phe Ala Arg Asp Asn Gly Ile Arg Val His Gly
 245 250 255
 His Val Leu 260 Trp His Ser Gln 265 Thr Pro Glu Ala Phe 270 His Glu
 275 280 285
 Gly Tyr Asp Thr Ser Lys Pro Leu Val Ser Arg Glu Val Met Leu Gly
 290 295 300
 Arg Met Glu Asn Tyr Ile Arg Glu Val Leu Thr Trp Thr Asn Glu Asn
 305 310 315 320
 Tyr Pro Gly Val Ile Val Ser Trp Asp Val Val Asn Glu Ala Ile Asp
 325 330 335
 Asp Gly Thr Asn Trp Leu Arg Asn Ser Asn Trp Tyr Lys Thr Val Gly
 340 345 350
 Gly Asp Phe Val Asn Arg Ala Phe Glu Phe Ala Arg Met Tyr Ala Ala
 355 360 365
 Asp Gly Val Leu Leu Tyr Tyr Asn Asp Tyr Asn Thr Ala Tyr Pro Ala
 370 375 380
 Lys Arg Lys Gly Ile Ile Lys Leu Leu Gly Gln Leu Ile Glu Glu Gly
 385 390 395 400
 Asn Ile Asp Gly Tyr Gly Phe Gln Met His His Ser Thr Gly Glu Pro
 405 410 415
 Ser Met Glu Met Ile Thr Ala Ser Val Glu Glu Ile Ala Ala Leu Gly
 420 425 430
 Ile Lys Leu Arg Val Ser Glu Leu Asp Val Gly Met Gly Ser Ser Met
 435 440 445
 Thr Glu Glu Ala Leu Met Lys Gln Lys Asp Lys Tyr Lys Ala Val Met
 450 455 460
 Glu Leu Met Leu Arg Phe Ala Asp Gln Thr Glu Ala Val Gln Val Trp
 465 470 475 480
 Gly Leu Thr Asp Asn Met Ser Trp Arg Thr Gly Gln Asn Pro Leu Leu
 485 490 495
 Phe Asp Arg Asn Arg Asn Pro Lys Pro Ala Phe Phe Gly Val Leu Glu
 500 505 510
 Ala Ala Glu Glu Ser Lys
 515

<210> 67

<211> 1224

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample

<400> 67

atgcggaacg	tcgtgcgtaa	accattgaca	atcggactcg	ctttaacact	attattgccc	60
atgggaatga	cggcaacatc	agcgaagaat	gcagattcct	atgcgaaaaa	acctcacatc	120
agcgcatgga	atgccccaca	attggatcaa	cgctacaaaa	acgagttcac	gattggtgcg	180
gcagtagaac	cttatcaact	acaaaatgaa	aaagacgtac	aaatgctaaa	gcgccacttc	240
aacagcattg	ttgccgagaa	cgtaatgaaa	ccgatcagca	ttcaacctga	ggaaggaaaa	300
ttcaattttg	aacaagcgga	tcgaattgtg	aagttcgcta	aggcaaattg	catggatatt	360
cgcttccata	cactcgtttg	gcacagccaa	gtacctcaat	ggttctttct	tgacaaggaa	420
ggcaagccaa	tggttaatga	aacagatcca	gtgaaacgtg	aacaaaataa	acaactgctg	480
ttaaaacgac	ttgaaactca	tattaaaacg	atcgtcgcgc	ggtacaaaga	tgacattaag	540
tactggggacg	ttgtaaatga	ggttgtgggg	gacgacggaa	aactgcgcaa	ctctccatgg	600
tatcaaatacg	ccggcatcga	ttatatataa	gtggcattcc	aaacagcgag	aaaatatggc	660
ggcaacaaga	ttaaacttta	tatcaatgat	tacaataccg	aagtgggaacc	aaagcgaagc	720
gctctttata	acttggtgaa	gcaattaaaa	gaagagggcg	ttcctattga	cggcatcggc	780
catcaatccc	acattcaaat	cggctggcct	ttgaagcag	aaatcgagaa	aacgattaac	840
atgttcgccc	ctctcggttt	agacaaccaa	atcactgagc	ttgatgtgag	catgtacggt	900
tggccgcccgc	gcgcttacc	gacgtatgac	gccattccaa	aacaaaagtt	tttggatcag	960
gcagcgcgct	atgatcgttt	gttcaaaactg	tatgaaaagt	tgagcgataa	aattagcaac	1020
gtcaccttct	ggggcatcgc	cgacaatcat	acgtggctcg	acagccgtgc	ggatgtgtac	1080
tatgacgcca	acgggaatgt	tgtggttgac	ccgaacgctc	cgtacgcaaa	agtggaaaaa	1140
gggaaaggaa	aagatgcgcc	gttcgttttt	ggaccggatt	acaaagtcaa	acccgcatat	1200
tgggctatta	tcgaccacaa	atag				1224

<210> 68

<211> 407

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample

<221> SIGNAL

<222> (1)...(28)

<400> 68

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Met Arg Asn Val Val Arg Lys Pro Leu Thr Ile Gly Leu Ala Leu Thr
 1      5      10      15
Leu Leu Leu Pro Met Gly Met Thr Ala Thr Ser Ala Lys Asn Ala Asp
 20      25      30
Ser Tyr Ala Lys Lys Pro His Ile Ser Ala Leu Asn Ala Pro Gln Leu
 35      40      45
Asp Gln Arg Tyr Lys Asn Glu Phe Thr Ile Gly Ala Ala Val Glu Pro
 50      55      60
Tyr Gln Leu Gln Asn Glu Lys Asp Val Gln Met Leu Lys Arg His Phe
 65      70      75      80
Asn Ser Ile Val Ala Glu Asn Val Met Lys Pro Ile Ser Ile Gln Pro
 85      90      95
Glu Glu Gly Lys Phe Asn Phe Glu Gln Ala Asp Arg Ile Val Lys Phe
100      105      110
Ala Lys Ala Asn Gly Met Asp Ile Arg Phe His Thr Leu Val Trp His
115      120      125
Ser Gln Val Pro Gln Trp Phe Phe Leu Asp Lys Glu Gly Lys Pro Met
130      135      140
Val Asn Glu Thr Asp Pro Val Lys Arg Glu Gln Asn Lys Gln Leu Leu
145      150      155      160
Leu Lys Arg Leu Glu Thr His Ile Lys Thr Ile Val Glu Arg Tyr Lys
165      170      175
Asp Asp Ile Lys Tyr Trp Asp Val Val Asn Glu Val Val Gly Asp Asp
180      185      190
Gly Lys Leu Arg Asn Ser Pro Trp Tyr Gln Ile Ala Gly Ile Asp Tyr
195      200      205
Ile Lys Val Ala Phe Gln Thr Ala Arg Lys Tyr Gly Gly Asn Lys Ile
210      215      220
Lys Leu Tyr Ile Asn Asp Tyr Asn Thr Glu Val Glu Pro Lys Arg Ser
225      230      235      240
Ala Leu Tyr Asn Leu Val Lys Gln Leu Lys Glu Glu Gly Val Pro Ile
245      250      255
Asp Gly Ile Gly His Gln Ser His Ile Gln Ile Gly Trp Pro Ser Glu
260      265      270
Ala Glu Ile Glu Lys Thr Ile Asn Met Phe Ala Ala Leu Gly Leu Asp
275      280      285
Asn Gln Ile Thr Glu Leu Asp Val Ser Met Tyr Gly Trp Pro Pro Arg
290      295      300
Ala Tyr Pro Thr Tyr Asp Ala Ile Pro Lys Gln Lys Phe Leu Asp Gln
305      310      315      320
Ala Ala Arg Tyr Asp Arg Leu Phe Lys Leu Tyr Glu Lys Leu Ser Asp
325      330      335
Lys Ile Ser Asn Val Thr Phe Trp Gly Ile Ala Asp Asn His Thr Trp
340      345      350
Leu Asp Ser Arg Ala Asp Val Tyr Tyr Asp Ala Asn Gly Asn Val Val
355      360      365
Val Asp Pro Asn Ala Pro Tyr Ala Lys Val Glu Lys Gly Lys Gly Lys
370      375      380
Asp Ala Pro Phe Val Phe Gly Pro Asp Tyr Lys Val Lys Pro Ala Tyr
385      390      395      400
Trp Ala Ile Ile Asp His Lys
405

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<210> 69

<211> 1596

<212> DNA

<213> Unknown

<220>

<223> obtained from an environmental sample

<400> 69

atggcgatgc	atagatttaa	gcaattagg	gccatcctac	ttgtcctatg	gttttgtgca	60
ttggccagtgc	aggcgagggc	ttggcgtg	gccgcagagc	agcgtattga	acagtaccgt	120
aagggggccac	tgcgggttca	ggtgaaggat	cctgaaggac	ggcccgtacc	gaatgcccaa	180
gtgcacgttc	gcatgacg	tcacgctttt	ggatttggtg	cggctgtcag	ctttggcctg	240
gtcgtgggggt	cgggatacaa	ccccacctat	cgggccaagc	tagaagacct	gacgggagc	300
ggccgcacat	tcaacatggc	tacgccagag	aatgaattga	agtggcctgc	gtgggagtcg	360
gaatggccca	tttcgaatcg	tcgaaagatc	gacgtcatca	actggctg	cgcaaaaggc	420
tacagcattc	gaggacacaa	cctgctatgg	cctgactggc	aatggatgcc	ccgtgatatt	480
gagcaaaacc	gcaacaatcc	acagtacatc	tacgatcg	ttcgcaatca	cattgctggc	540
ttggctgggc	atcgggacat	tcggggcaaa	ctgcgggact	gggatgttct	taacgaacca	600
gcccaccta	ccgcattg	cgatgtgttt	aacggttggg	gctcatatga	gcgtggggaa	660
gcatttctt	tggtgtctt	taggtggg	aaggcagcag	actcgaccgc	ccgtctatac	720
atcaacgagt	acaacattat	caacaactac	gccaacgagc	agcctacg	caactattac	780
aagtggatca	ttgcacgcct	aatctcaaaa	ggagcgccta	tcgaagggat	cggcattcag	840
gggcatattt	cggcaccact	gccaagcatg	agtgagggtc	aggcagccct	agacgaaatg	900
gcagtttttg	gattgccttt	ggccatcaca	gaatacgacg	ttaccggcgt	ttcgggaagaa	960
gtcgaagcca	actttatg	ggactttttg	accatggtct	ttagtcatcc	cgctgtggag	1020
agcttcgtca	tgtgggggtt	ctggagcgga	gcacactggc	gtgacaatgc	gccgctgttt	1080
cgggccgact	ggagtctcaa	gccttcggga	cagggtgttc	ttgatctggt	ctttcggcgc	1140
tggtggaccg	atactacggg	ggtaacgggt	ccagatggta	gctgggtctgt	acgcggattt	1200
ttagggggatt	acgttgttga	agtgcagggt	ggggagggtt	cagtgaccaa	gtccctgcgc	1260
ctcgaaagcc	cgcaggatac	aaccacgcta	gaggtgggtg	tcagttagcgt	taaggtgggt	1320
gaaaagccta	cagaagacgt	gttgcgcggt	caagggtttg	gaccagaccc	ctttgtcgaa	1380
ggaacggcgc	tgcgctactg	gttagggcgg	ccggccgag	ttgaactggc	agtgtatgat	1440
gtgctggggc	gacaggtcta	cgccgtgcaa	aagcatcg	tagctgggtg	gcatactgaa	1500
tgggtcgagg	cttccactg	gcctgcagga	ctttatctgt	accgactcca	agcaggtgat	1560
ctgttgca	cgggtagaat	ggtcaagatc	caataa			1596

<210> 70

<211> 531

<212> PRT

<213> Unknown

<220>

<223> obtained from an environmental sample

<221> SIGNAL

<222> (1)...(25)

<400> 70

Met	Ala	Met	His	Arg	Phe	Lys	Gln	Leu	Gly	Ala	Ile	Leu	Leu	Val	Leu
1				5					10					15	
Trp	Phe	Cys	Ala	Leu	Pro	Val	Gln	Ala	Gln	Ala	Trp	Arg	Ala	Ala	Ala
			20					25					30		
Glu	Gln	Arg	Ile	Glu	Gln	Tyr	Arg	Lys	Gly	Pro	Leu	Arg	Val	Gln	Val
		35				40					45				
Lys	Asp	Pro	Glu	Gly	Arg	Pro	Val	Pro	Asn	Ala	Gln	Val	His	Val	Arg
	50				55					60					
Met	Thr	Arg	His	Ala	Phe	Gly	Phe	Gly	Thr	Ala	Val	Ser	Phe	Gly	Leu
65				70				75						80	
Val	Val	Gly	Ser	Gly	Tyr	Asn	Pro	Thr	Tyr	Arg	Ala	Lys	Leu	Glu	Asp
			85					90						95	
Leu	Thr	Gly	Asp	Gly	Arg	Thr	Phe	Asn	Met	Ala	Thr	Pro	Glu	Asn	Glu
		100				105							110		
Leu	Lys	Trp	Pro	Ala	Trp	Glu	Ser	Glu	Trp	Pro	Ile	Ser	Asn	Arg	Arg
	115					120					125				
Lys	Ile	Asp	Val	Ile	Asn	Trp	Leu	Arg	Ala	Lys	Gly	Tyr	Ser	Ile	Arg
	130				135					140					
Gly	His	Asn	Leu	Leu	Trp	Pro	Asp	Trp	Gln	Trp	Met	Pro	Arg	Asp	Ile
145				150				155						160	
Glu	Gln	Asn	Arg	Asn	Pro	Gln	Tyr	Ile	Tyr	Asp	Arg	Val	Arg	Asn	
		165				170							175		
His	Ile	Ala	Ala	Leu	Ala	Gly	His	Arg	Asp	Ile	Arg	Gly	Lys	Leu	Arg
	180					185							190		
Asp	Trp	Asp	Val	Leu	Asn	Glu	Pro	Ala	His	Leu	Thr	Ala	Leu	Arg	Asp
	195					200						205			

Val Phe Asn Gly Trp Gly Ser Tyr Glu Arg Gly Glu Asp Phe Tyr Val
 210 215 220
 Asp Val Phe Arg Trp Ala Lys Ala Ala Asp Ser Thr Ala Arg Leu Tyr
 225 230 235
 Ile Asn Glu Tyr Asn Ile Ile Asn Asn Tyr Ala Asn Glu Gln Pro Thr
 245 250 255
 Arg Asn Tyr Tyr Lys Trp Ile Ile Ala Arg Leu Ile Ser Lys Gly Ala
 260 265 270
 Pro Ile Glu Gly Ile Gly Ile Gln Gly His Ile Ser Ala Pro Leu Pro
 275 280 285
 Ser Met Ser Glu Val Lys Ala Ala Leu Asp Glu Met Ala Val Phe Gly
 290 295 300
 Leu Pro Leu Ala Ile Thr Glu Tyr Asp Val Thr Gly Val Ser Glu Glu
 305 310 315
 Val Glu Ala Asn Phe Met Arg Asp Phe Leu Thr Met Val Phe Ser His
 325 330 335
 Pro Ala Val Glu Ser Phe Val Met Trp Gly Phe Trp Ser Gly Ala His
 340 345 350
 Trp Arg Asp Asn Ala Pro Leu Phe Arg Ala Asp Trp Ser Leu Lys Pro
 355 360 365
 Ser Gly Gln Val Phe Leu Asp Leu Val Phe Arg Arg Trp Trp Thr Asp
 370 375 380
 Thr Thr Gly Val Thr Gly Pro Asp Gly Ser Trp Ser Val Arg Gly Phe
 385 390 395
 Leu Gly Asp Tyr Val Val Glu Val Gln Val Gly Glu Val Ser Val Thr
 405 410 415
 Lys Ser Leu Arg Leu Glu Ser Pro Gln Asp Thr Thr Thr Leu Glu Val
 420 425 430
 Val Val Ser Ser Val Lys Val Gly Glu Lys Pro Thr Glu Asp Val Leu
 435 440 445
 Arg Val Gln Gly Phe Gly Pro Asp Pro Phe Val Glu Gly Thr Ala Leu
 450 455 460
 Arg Tyr Trp Leu Gly Arg Pro Ala Asp Val Glu Leu Ala Val Tyr Asp
 465 470 475
 Val Leu Gly Arg Gln Val Tyr Ala Val Gln Lys His Arg Val Ala Gly
 485 490 495
 Trp His Thr Glu Trp Val Glu Ala Ser His Trp Pro Ala Gly Leu Tyr
 500 505 510
 Leu Tyr Arg Leu Gln Ala Gly Asp Leu Leu His Thr Gly Arg Met Val
 515 520 525
 Lys Ile Gln
 530

<210> 71
 <211> 1269
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 71
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 cgcaacgtgc tctatgtgga aacggtttct gaaggcacc ttgactttga gatccgtaat 180
 tttgtcctga cggctccgaa cggactaccg gagcccaagc cgaccgagcc tccgatggtc 240
 atcgaggaag ccgagaacgt gcccagtcctc aaagagattt atgcagacaa attcgatttc 300
 ggctccgccg cgccccagat ggtattccgt gaccccaaat ggctcaacct gatgaaggaa 360
 cagttcagca ttctgacgcc ggaaaacgaa atgaaaccgg attccgttct ggatgtgggc 420
 gcgagcaaaag cgctgggtgaa ggaaaccggt gatgagaccg ccgtcgccgt tcatttcgac 480
 gctgcaaaag cgctgctgaa ttttgccaag agcaacggga tcaaggttca cggccatgtg 540
 ctgatctggc acagccagac gccggaagct ttcttccatc agggatatga ttccaagaag 600
 cctttcgtaa cacgggaagt gatgctgggc cgaatggaaa attacattaa ggggtgtttt 660
 gaatacctgg atgaaaatta tcccggcgct gttgtctcct gggacgtgct gaatgaggcg 720
 attgacgacg gaagcaactg gctgcggaac agcaactgga gaaagattgt cggcgaagac 780
 tatccgaacc gggcatatga atatgcgcgc aaatatgcgc cggaaggtag gctgctgtat 840
 tacaacgatt acaatacgtc gattcccggg aaactgaacg gcattgtgaa actgctgaac 900
 agtctgattc cggaaggaaa tatcgacggt tacggcttcc agatgcacca tggcgtcggc 960
 ttccccgtcca ttgatattgat ccagactgca gtggaacgga ttgccgcgct gaatatccgc 1020

cttcgcgtca	gcgaactgga	tgtcacggtg	gacaacaaca	cggaagcgtc	cttcaacaaa	1080
caggcaaagt	attatgccga	agtcattgaag	attctgattg	ctcacagcga	ccagtttgag	1140
gctgtgcagg	tctgggggct	gacagacctg	atgagctggc	gcggcagtc	gttcccgcgtg	1200
ctgtttgacg	gggcaggcaa	tccgaaaccg	gcgttctggg	ccgtcgcgga	tccggattcc	1260
gtgaaataa						1269

<210> 72
 <211> 422
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 72

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Leu	Ala	His	Gly	Thr	Ala	Lys	Lys	Gly	Glu	Trp	Thr	Thr	Leu	Lys	Gly
			20					25					30		
Thr	Tyr	Thr	Ala	Gly	Ala	Tyr	Gln	Arg	Asn	Val	Leu	Tyr	Val	Glu	Thr
		35					40				45				
Val	Ser	Glu	Gly	Thr	Leu	Asp	Phe	Glu	Ile	Arg	Asn	Phe	Val	Leu	Thr
	50				55						60				
Ala	Pro	Asn	Gly	Leu	Pro	Glu	Pro	Lys	Pro	Thr	Glu	Pro	Pro	Met	Val
65				70					75					80	
Ile	Glu	Glu	Ala	Glu	Asn	Val	Pro	Ser	Leu	Lys	Glu	Ile	Tyr	Ala	Asp
			85						90					95	
Lys	Phe	Asp	Phe	Gly	Ser	Ala	Ala	Pro	Gln	Met	Val	Phe	Arg	Asp	Pro
			100					105					110		
Lys	Trp	Leu	Asn	Leu	Met	Lys	Glu	Gln	Phe	Ser	Ile	Leu	Thr	Pro	Glu
	115						120					125			
Asn	Glu	Met	Lys	Pro	Asp	Ser	Val	Leu	Asp	Val	Gly	Ala	Ser	Lys	Ala
	130					135					140				
Leu	Val	Lys	Glu	Thr	Gly	Asp	Glu	Thr	Ala	Val	Ala	Val	His	Phe	Asp
145					150				155					160	
Ala	Ala	Lys	Ala	Leu	Asn	Phe	Ala	Lys	Ser	Asn	Gly	Ile	Lys	Val	
			165					170					175		
His	Gly	His	Val	Leu	Ile	Trp	His	Ser	Gln	Thr	Pro	Glu	Ala	Phe	Phe
			180					185					190		
His	Gln	Gly	Tyr	Asp	Ser	Lys	Lys	Pro	Phe	Val	Thr	Arg	Glu	Val	Met
	195						200					205			
Leu	Gly	Arg	Met	Glu	Asn	Tyr	Ile	Lys	Gly	Val	Phe	Glu	Tyr	Leu	Asp
	210					215					220				
Glu	Asn	Tyr	Pro	Gly	Val	Val	Ser	Trp	Asp	Val	Leu	Asn	Glu	Ala	
225					230				235					240	
Ile	Asp	Asp	Gly	Ser	Asn	Trp	Leu	Arg	Asn	Ser	Asn	Trp	Arg	Lys	Ile
			245						250					255	
Val	Gly	Glu	Asp	Tyr	Pro	Asn	Arg	Ala	Tyr	Glu	Tyr	Ala	Arg	Lys	Tyr
			260					265					270		
Ala	Pro	Glu	Gly	Thr	Leu	Leu	Tyr	Asn	Asp	Tyr	Asn	Thr	Ser	Ile	
	275						280				285				
Pro	Gly	Lys	Leu	Asn	Gly	Ile	Val	Lys	Leu	Leu	Asn	Ser	Leu	Ile	Pro
	290					295					300				
Glu	Gly	Asn	Ile	Asp	Gly	Tyr	Gly	Phe	Gln	Met	His	His	Gly	Val	Gly
305					310				315					320	
Phe	Pro	Ser	Ile	Asp	Met	Ile	Gln	Thr	Ala	Val	Glu	Arg	Ile	Ala	Ala
			325						330					335	
Leu	Asn	Ile	Arg	Leu	Arg	Val	Ser	Glu	Leu	Asp	Val	Thr	Val	Asp	Asn
			340					345					350		
Asn	Thr	Glu	Ala	Ser	Phe	Asn	Lys	Gln	Ala	Lys	Tyr	Tyr	Ala	Glu	Val
	355						360					365			
Met	Lys	Ile	Leu	Ile	Ala	His	Ser	Asp	Gln	Phe	Glu	Ala	Val	Gln	Val
	370					375					380				
Trp	Gly	Leu	Thr	Asp	Leu	Met	Ser	Trp	Arg	Gly	Ser	Gln	Phe	Pro	Leu
385					390				395					400	
Leu	Phe	Asp	Gly	Ala	Gly	Asn	Pro	Lys	Pro	Ala	Phe	Trp	Ala	Val	Ala
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Asp	Pro	Asp	Ser	Val	Lys										
			420												

<210> 73
 <211> 4455
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 73
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 gttctactgt accatcgaat tggttgataat cctactaatc aatggacgga taccagcggt 180
 gaaacgttta aacagactat gcaatatcta aatgatagcg gttacaacac cttgtcagcc 240
 gaacaatatg taaagatcat ggatggaacg gcaacggcgc ctgaaaaacc gattctatta 300
 acgtttgacg atgggtactcc agaatttatc accaatgctc ttccagtatt aaagcaatat 360
 aacatgaaag ctgttctgtt tattgtcagt gactggatag gcggcggcct cagcatgtca 420
 aaagaacagc tgcaaagttt ggctaatagaa ccattctttaa gcctcgaaaa tcatacgaaa 480
 acccatgacg gtactattttg gggaaacaaat ggcggtgtac gtagtacgat aacgaaagaa 540
 caagctgagg accaaattat atcagcgaat acttatctta aaagtattac aggtaaagac 600
 ccagtcctaa tggcataccc ttatggcagc tataatgata ttgcaaaact agtaaaccaa 660
 gaaaaatgta ttaagtacgc atttaaaagt ggatacccta atgaagataa ttatgctatg 720
 ggccgtcact atgtaacaaa tcaaagtgtg gctcaaatgg cccaaatgat tggcggccct 780
 gtgccagaac caactccaga accaggaaaac cagacagaaa ccgtctatca agaaaccttt 840
 gccagtata ttggtgtagc agttcaagcg ggtaaccac aagtaaccac cgtttctggt 900
 atgggttttg caggcaatga cgatggaaaa gccatctctg tttagcggcag gacgaacaac 960
 tgggacggcg tcgatattccc attcaacaat gtcgggtatgg aaaacggcaa aacttatacg 1020
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 ctgcagaatg tagacagcta taacggtttg tatgttgccg cagattatgc agcgggacag 1140
 gcttttactt taacgggtca gtataccgtg gatactagta aagatagagc cctacgtatc 1200
 caatcaaattg atgctgggaa aactgttccg ttttacattg gaaacatctt gattacaacg 1260
 aaaaaacga ctgcgcctga aacagataga gtggtatttc acgaaacatt tggaaatggt 1320
 tttggtgttg ctacacaagc ggggaagtgcg aaattgactc ctgtttctga gcttgtttt 1380
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 actggttttg tttatagcag tgtgagtgtt cctgaagggt cacaagcttt gcttcagaat 1560
 gtagacagct ttaattggct gtatgcagca gcagatgta aggcagggtca aacatttact 1620
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 aatgaagcca atcatactga tggcggttcc tatgttttga aggttgaagg cagatcacia 1920
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acaaaaacaa	ttaaactaga	taagaccgga	ccaatattag	atattaaact	cgacaaaaca	4140
acattatcac	cagttaatca	taagatgggtc	ccaatatcgg	cggctattag	tgcattctgat	4200
gccgattcag	gaattcattc	agtagtggtta	acatcaatta	ctagcaatga	atctatccaa	4260
cctgatgata	ttcagaatgc	caactataat	aaacctatta	caggtactac	ggattccttt	4320
aaacttcgtg	cagaaagatt	agcaaaccgt	aatggccgtg	tttacaccat	tacttatatc	4380
gccacagata	aagctggtaa	tgtgacaaca	aaaagtgttg	aagtttccgt	tccacgcgac	4440
aattctaaaa	aataa					4455

<210> 74
 <211> 1484
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(21)

<400> 74

Met	Gln	Lys	Met	Arg	Arg	Lys	Leu	Lys	Arg	Ile	Met	Leu	Leu	Leu	Leu
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Ala	Ala	Met	Leu	Ile	Ile	Pro	Ser	Gly	Trp	Ile	Thr	Gln	Ala	Ser	Ala
			20					25					30		
Ala	Glu	Thr	Asn	Lys	Asp	Ile	Pro	Val	Leu	Leu	Tyr	His	Arg	Ile	Val
			35				40					45			
Asp	Asn	Pro	Thr	Asn	Gln	Trp	Thr	Asp	Thr	Ser	Val	Glu	Thr	Phe	Lys
	50					55					60				
Gln	Thr	Met	Gln	Tyr	Leu	Asn	Asp	Ser	Gly	Tyr	Asn	Thr	Leu	Ser	Ala
65					70					75				80	
Glu	Gln	Tyr	Val	Lys	Ile	Met	Asp	Gly	Thr	Ala	Thr	Ala	Pro	Glu	Lys
				85					90					95	
Pro	Ile	Leu	Leu	Thr	Phe	Asp	Asp	Gly	Thr	Pro	Glu	Phe	Ile	Thr	Asn
			100					105					110		
Ala	Leu	Pro	Val	Leu	Lys	Gln	Tyr	Asn	Met	Lys	Ala	Val	Leu	Phe	Ile
		115					120					125			
Val	Ser	Asp	Trp	Ile	Gly	Gly	Gly	Phe	Ser	Met	Ser	Lys	Glu	Gln	Leu
		130				135					140				
Gln	Ser	Leu	Ala	Asn	Glu	Pro	Ser	Leu	Ser	Leu	Glu	Asn	His	Thr	Lys
145					150					155					160
Thr	His	Asp	Gly	Thr	Ile	Trp	Gly	Thr	Asn	Gly	Gly	Val	Arg	Ser	Thr
				165					170					175	
Ile	Thr	Lys	Glu	Gln	Ala	Glu	Asp	Gln	Ile	Ile	Ser	Ala	Asn	Thr	Tyr
			180					185					190		
Leu	Lys	Ser	Ile	Thr	Gly	Lys	Asp	Pro	Val	Leu	Met	Ala	Tyr	Pro	Tyr
		195					200					205			
Gly	Ser	Tyr	Asn	Asp	Ile	Ala	Lys	Leu	Val	Asn	Gln	Glu	Asn	Gly	Ile
		210				215					220				
Lys	Tyr	Ala	Phe	Lys	Val	Gly	Tyr	Pro	Asn	Glu	Asp	Asn	Tyr	Ala	Met
225					230					235					240
Gly	Arg	His	Tyr	Val	Thr	Asn	Gln	Ser	Val	Ala	Gln	Ile	Ala	Gln	Met
				245					250					255	
Ile	Gly	Gly	Pro	Val	Pro	Glu	Pro	Thr	Pro	Glu	Pro	Gly	Asn	Gln	Thr
			260					265					270		
Glu	Thr	Val	Tyr	Gln	Glu	Thr	Phe	Ala	Ser	Asp	Ile	Gly	Val	Ala	Val
		275					280					285			
Gln	Ala	Gly	Asn	Pro	Gln	Val	Thr	His	Val	Ser	Gly	Met	Val	Phe	Ala
	290					295					300				
Gly	Asn	Asp	Asp	Gly	Lys	Ala	Ile	Ser	Val	Ser	Gly	Arg	Thr	Asn	Asn
305					310					315					320

Trp Asp Gly Val Asp Ile Pro Phe Asn Asn Val Gly Met Glu Asn Gly
 Lys Thr Tyr Thr Ile Thr Val Thr Gly Tyr Val Asp Glu Asn Ala Thr
 Val Pro Ser Gly Ala Gln Ala Leu Gln Asn Val Asp Ser Tyr Asn
 Gly Leu Tyr Val Ala Ala Asp Tyr Ala Ala Gly Gln Ala Phe Thr Leu
 Thr Gly Gln Tyr Thr Val Asp Thr Ser Lys Asp Arg Ala Leu Arg Ile
 Gln Ser Asn Asp Ala Gly Lys Thr Val Pro Phe Tyr Ile Gly Asn Ile
 Leu Ile Thr Thr Lys Lys Thr Thr Ala Pro Glu Thr Asp Arg Val Val
 Phe His Glu Thr Phe Gly Asn Gly Val Gly Val Ala Thr Gln Ala Gly
 Ser Ala Lys Leu Thr Pro Val Ser Glu Leu Val Phe Glu Gly Asn Ser
 Asp Gly Lys Ala Ile Ser Val Asn Gly Arg Ser Asn Asn Trp Asp Gly
 Val Asp Ile Pro Phe Ser Ser Val Ser Met Gln Asn Gly Lys Ala Tyr
 Thr Ile Thr Val Thr Gly Phe Val Tyr Ser Ser Val Ser Val Pro Glu
 Gly Ala Gln Ala Leu Leu Gln Asn Val Asp Ser Tyr Asn Gly Leu Tyr
 Ala Ala Ala Asp Val Lys Ala Gly Gln Thr Phe Thr Leu Thr Gly Gln
 Tyr Thr Val Asp Thr Ser Lys Asp Arg Ala Leu Arg Ile Gln Ser Asn
 Asp Ala Gly Lys Thr Val Pro Phe Tyr Ile Gly Asp Ile Leu Ile Thr
 Glu Lys Ala Ala Ser Gly Gly Gly Gly Asp Asp Gly Arg Leu Pro Ala
 Glu Pro Phe Thr Ala Ile Asn Phe Glu Asp Gln Asn Met Gly Gly Phe
 Glu Gly Arg Ala Gly Thr Glu Thr Leu Thr Val Thr Asn Glu Ala Asn
 His Thr Asp Gly Gly Ser Tyr Ala Leu Lys Val Glu Gly Arg Ser Gln
 Ala Trp His Gly Pro Ala Leu His Val Glu Lys Tyr Val Asp Lys Asp
 Ser Glu Tyr Lys Ile Ser Ala Trp Val Lys Leu Ile Ser Pro Ala Thr
 Ser Gln Leu Gln Leu Ser Thr Gln Val Gly Asn Gly Gly Thr Ala Ser
 Tyr Asn Asn Leu Gln Gly Lys Thr Ile Ser Thr Glu Asp Gly Trp Val
 Lys Leu Glu Gly Thr Tyr Arg Tyr Ser Ser Val Gly Asp Glu Phe Leu
 Thr Ile Tyr Val Glu Ser Ser Asn Asn Ser Thr Ala Ser Phe Tyr Ile
 Asp Asp Ile Thr Phe Glu Ser Thr Gly Ser Gly Pro Ile Glu Val Glu
 Asp Leu Thr Pro Ile Lys Asp Val Tyr Gln Asp Asp Phe Leu Ile Gly
 Asn Ala Val Ser Ala Ser Asp Leu Glu Gly Asn Arg Leu Lys Leu Leu
 Asn Met His His Asn Val Val Thr Ala Glu Asn Ala Met Lys Pro Asp
 Gln Ala Tyr Asn Ala Glu Lys Gln Phe Asp Phe Thr Asp Glu Asn Ala
 Leu Val Asp Lys Val Leu Asp Gln Gly Leu Gln Leu His Gly His Val
 Leu Val Trp His Gln Gln Thr Pro Glu Trp Leu Phe Thr Ala Glu Asn
 Gly Ala Pro Leu Ser Arg Glu Ala Ala Leu Ala Asn Leu Arg Thr His
 Val Lys Thr Val Val Glu Asn Tyr Gly Asn Lys Val Ile Ser Trp Asp

865	Val	Val	Asn	Glu	Ala	Ile	Ile	Asp	Asn	Pro	Pro	Asn	Pro	Thr	Asp	Trp	880
				885						890					895		
Lys	Ala	Ser	Leu	Arg	Lys	Ser	Gly	Trp	Tyr	Lys	Ser	Ile	Gly	Pro	Asp		
			900					905					910				
Phe	Val	Glu	Gln	Ser	Phe	Leu	Ala	Ala	Lys	Glu	Val	Leu	Asn	Glu	Lys		
		915					920					925					
Gly	Leu	Asn	Ile	Lys	Leu	Tyr	Tyr	Asn	Asp	Tyr	Asn	Asp	Asp	Asn	Gln		
	930					935					940						
Ser	Lys	Ala	Glu	Ala	Ile	Tyr	Gln	Met	Val	Lys	Asp	Ile	Asn	Glu	Lys		
945					950					955					960		
Tyr	Ala	Lys	Glu	His	Asp	Gly	Asp	Leu	Leu	Ile	Asp	Gly	Ile	Gly	Met		
				965					970					975			
Gln	Ala	His	Tyr	Asn	Lys	Asn	Thr	Asn	Pro	Glu	Asn	Val	Lys	Leu	Ser		
			980					985					990				
Leu	Glu	Lys	Phe	Ile	Thr	Leu	Gly	Val	Glu	Val	Ser	Val	Thr	Glu	Leu		
		995					1000					1005					
Asp	Ile	Thr	Ala	Gly	Thr	Asn	Asn	Val	Leu	Thr	Glu	Lys	Glu	Ala	Ile		
	1010					1015					1020						
Ala	Gln	Gly	Tyr	Leu	Tyr	Ala	Gln	Leu	Phe	Lys	Ile	Tyr	Lys	Glu	His		
1025					1030				1035						1040		
Ala	Glu	His	Ile	Ser	Arg	Val	Thr	Phe	Trp	Gly	Leu	Asn	Asp	Ala	Thr		
				1045					1050					1055			
Ser	Trp	Arg	Ala	Ala	Gln	Ser	Pro	Leu	Leu	Phe	Asp	Lys	Asp	Leu	Gln		
			1060					1065					1070				
Ala	Lys	Pro	Ala	Tyr	Tyr	Ala	Val	Ile	Asp	Pro	Asp	Thr	Phe	Thr	Val		
		1075					1080					1085					
Glu	Asn	Gln	Pro	Glu	Val	Arg	Glu	Ala	Asn	Gln	Gly	Ser	Ala	Val	Ser		
	1090					1095					1100						
Gly	Thr	Pro	Val	Ile	Asp	Gly	Thr	Val	Asp	Gly	Val	Trp	Ser	Asn	Ala		
1105					1110					1115					1120		
Thr	Glu	Leu	Pro	Ile	Asn	Arg	Phe	Gln	Met	Ala	Trp	Gln	Gly	Ala	Asn		
				1125					1130					1135			
Gly	Val	Ser	Lys	Val	Leu	Trp	Asp	Asn	Glu	Asn	Leu	Tyr	Val	Leu	Ile		
			1140					1145					1150				
Gln	Val	Ser	Asp	Ser	Gln	Leu	Asp	Lys	Ser	Ser	Pro	Asn	Pro	Trp	Glu		
		1155					1160					1165					
Gln	Asp	Ser	Ile	Glu	Val	Phe	Val	Asp	Glu	Asn	Asn	Ala	Lys	Thr	Ser		
	1170					1175					1180						
Ser	Phe	Glu	Asp	Gly	Asp	Gly	Gln	Tyr	Arg	Val	Asn	Phe	Asp	Asn	Glu		
1185					1190				1195						1200		
Thr	Ser	Phe	Asn	Pro	Val	Arg	Val	Gly	Glu	Gly	Phe	Glu	Ser	Ala	Thr		
			1205					1210						1215			
Lys	Ala	Ser	Gly	Asn	Gly	Tyr	Thr	Val	Glu	Val	Lys	Ile	Pro	Phe	Lys		
			1220					1225					1230				
Thr	Ile	Thr	Pro	Asp	Asn	Asn	Thr	Lys	Ile	Gly	Phe	Asp	Val	Gln	Ile		
		1235					1240					1245					
Asn	Asp	Gly	Lys	Asp	Gly	Ala	Arg	Gln	Ser	Ala	Ala	Thr	Trp	Asn	Asp		
	1250				1255					1260							
Leu	Thr	Gly	Leu	Gly	Tyr	Gln	Asp	Thr	Ser	Val	Phe	Gly	Val	Leu	Thr		
1265				1270					1275						1280		
Leu	Met	Lys	Thr	Asp	Thr	Thr	Ala	Pro	Val	Thr	Thr	Asp	Asn	Gly	Pro		
			1285					1290						1295			
Glu	Asp	Trp	Val	Asn	Lys	Asp	Val	Thr	Ile	Ala	Phe	Ser	Ala	Asn	Asp		
			1300				1305						1310				
Asn	Asp	Thr	Gly	Val	Ala	Ala	Thr	Tyr	Tyr	Ser	Ile	Asp	Asn	Gly	Val		
		1315					1320					1325					
Val	Gln	Asn	Gly	Asn	Ser	Val	Thr	Ile	Ser	Glu	Glu	Gly	Val	His	Ile		
	1330					1335					1340						
Leu	Thr	Tyr	Trp	Ser	Val	Asp	Lys	Ala	Gly	Asn	Val	Glu	Gln	Val	His		
1345					1350				1355						1360		
Thr	Lys	Thr	Ile	Lys	Leu	Asp	Lys	Thr	Gly	Pro	Ile	Leu	Asp	Ile	Lys		
			1365					1370						1375			
Leu	Asp	Lys	Thr	Thr	Leu	Ser	Pro	Val	Asn	His	Lys	Met	Val	Pro	Ile		
		1380					1385					1390					
Ser	Ala	Ala	Ile	Ser	Ala	Ser	Asp	Ala	Asp	Ser	Gly	Ile	His	Ser	Val		
		1395					1400					1405					
Val	Leu	Thr	Ser	Ile	Thr	Ser	Asn	Glu	Ser	Ile	Gln	Pro	Asp	Asp	Ile		
	1410					1415					1420						

Gln Asn Ala Asn Tyr Asn Lys Pro Ile Thr Gly Thr Thr Asp Ser Phe
 1425 1430 1435 1440
 Lys Leu Arg Ala Glu Arg Leu Ala Asn Gly Asn Gly Arg Val Tyr Thr
 1445 1450 1455
 Ile Thr Tyr Thr Ala Thr Asp Lys Ala Gly Asn Val Thr Thr Lys Ser
 1460 1465 1470
 Val Glu Val Ser Val Pro Arg Asp Asn Ser Lys Lys
 1475 1480

<210> 75
 <211> 1122
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 75
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 tcggcgctcg agcgatttct caaggacgtc ttttcggatt ccttcaagggt cggcgtagcc 120
 ctcaatgccg atcagattac gggggcggac tcggccagcc tcgacttgct cttggctcac 180
 ttcgattctc ttgtcgctga aaatgcgatg aagtgggggt cgctcaatcc tgagccgggg 240
 gtttacgatt tccgggtggc tgacgccctg gtcgatttgg cggagcggga aggtttgttt 300
 ttgggtggcc acacactgct ctggcatcag cagacgccgg actgggtttt tctggacgag 360
 aaggggcgaga ccgccacgcg ggagctggtg ctgcctcgac tggagacgca catccgcacc 420
 gtggtcggcc gctaccaggg ccgggtgcag ggctgggatg tggtaacga agccttgaac 480
 gaagacggtt cgttgcggga gtcgaaatgg ttgcagatca tcggcccggga ctacatcgaa 540
 ctggcggttc gcattggcga ggaggccgat cccgacgccg agctttatta caatgactac 600
 aatgtgtcca agcccggcaa gcgaggtgga gtggtgcgcc tgcttgaga gctgcaggcg 660
 aaaggagtta aggtcgatgc ggtcggcatc cagggccact acagtctcgg gcaccctgag 720
 ctcgaccagc tcgaggccag catttctgcg ataacggagg ctggggctcc gatcatgata 780
 accgagctcg atgtgtcggc cttgcccttt cccgacgcgg agcaaatggg ggcggacgtg 840
 tcgctcagct ttgagatgca ggaccacctc aatccctatg ccgatggctt gcccgaggcg 900
 gtttcgcagc agctagctga acgttacgcg gccatttttg aagtgttttt gcgccaccag 960
 agccacatcg accgcgtgac gttttgggga gtgcacgacg gggtcagctg gtggaactat 1020
 tggccgatcg cgggcaggac cgactatccc ttgctgtttg atcgggagct caagcggaaa 1080
 gcggccttcg aggcgggtggt cgatttagcg gagggccgct ga 1122

<210> 76
 <211> 373
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(22)

<400> 76
 Met Lys Lys His Ile Val Leu Phe Ala Phe Leu Ser Val Ile Leu Leu
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 Ala Ala Arg Ser Ser Ala Ser Glu Arg Phe Leu Lys Asp Val Phe Ser
 20 25 30
 Asp Ser Phe Lys Val Gly Val Ala Leu Asn Ala Asp Gln Ile Thr Gly
 35 40 45
 Ala Asp Ser Ala Ser Leu Asp Leu Ser Leu Ala His Phe Asp Ser Leu
 50 55 60
 Val Ala Glu Asn Ala Met Lys Trp Gly Ser Leu Asn Pro Glu Pro Gly
 65 70 75 80
 Val Tyr Asp Phe Arg Val Ala Asp Ala Leu Val Asp Leu Ala Glu Arg
 85 90 95
 Glu Gly Leu Phe Leu Val Gly His Thr Leu Leu Trp His Gln Gln Thr
 100 105 110
 Pro Asp Trp Val Phe Leu Asp Glu Lys Gly Glu Thr Ala Thr Arg Glu
 115 120 125
 Leu Val Leu Ala Arg Leu Glu Thr His Ile Arg Thr Val Val Gly Arg
 130 135 140
 Tyr Gln Gly Arg Val Gln Gly Trp Asp Val Val Asn Glu Ala Leu Asn

145	Glu	Asp	Gly	Ser	Leu	Arg	Glu	Ser	Lys	Trp	Leu	Gln	Ile	Ile	Gly	Pro
					165					170					175	
	Asp	Tyr	Ile	Glu	Leu	Ala	Phe	Arg	Met	Ala	Lys	Glu	Ala	Asp	Pro	Asp
				180					185					190		
	Ala	Glu	Leu	Tyr	Tyr	Asn	Asp	Tyr	Asn	Val	Ser	Lys	Pro	Gly	Lys	Arg
			195					200					205			
	Gly	Gly	Val	Val	Arg	Leu	Leu	Gly	Glu	Leu	Gln	Ala	Lys	Gly	Val	Lys
		210				215						220				
	Val	Asp	Ala	Val	Gly	Ile	Gln	Gly	His	Tyr	Ser	Leu	Gly	His	Pro	Glu
	225				230						235					240
	Leu	Asp	Gln	Leu	Glu	Ala	Ser	Ile	Ser	Ala	Ile	Thr	Glu	Ala	Gly	Ala
				245					250						255	
	Pro	Ile	Met	Ile	Thr	Glu	Leu	Asp	Val	Ser	Val	Leu	Pro	Phe	Pro	Asp
			260						265					270		
	Ala	Glu	Gln	Met	Gly	Ala	Asp	Val	Ser	Leu	Ser	Phe	Glu	Met	Gln	Asp
			275					280					285			
	His	Leu	Asn	Pro	Tyr	Ala	Asp	Gly	Leu	Pro	Glu	Ala	Val	Ser	Gln	Gln
		290					295					300				
	Leu	Ala	Glu	Arg	Tyr	Ala	Ala	Ile	Phe	Glu	Val	Phe	Leu	Arg	His	Gln
	305					310					315					320
	Ser	His	Ile	Asp	Arg	Val	Thr	Phe	Trp	Gly	Val	His	Asp	Gly	Val	Ser
				325						330					335	
	Trp	Trp	Asn	Tyr	Trp	Pro	Ile	Ala	Gly	Arg	Thr	Asp	Tyr	Pro	Leu	Leu
			340						345					350		
	Phe	Asp	Arg	Glu	Leu	Lys	Arg	Lys	Ala	Ala	Phe	Glu	Ala	Val	Val	Asp
		355						360					365			
	Leu	Ala	Glu	Gly	Arg											
	370															

<210> 77
 <211> 1248
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 77																	
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acagcaccac	aattggacca	acgatataaa	gattctttca	ccataggtgc	agcggttgag												180
ccaaatcaat	tattagatgc	aaaagactca	caaatgttaa	agcgccattt	taatagcatt												240
gtagcagaaa	atgtcatgaa	gcctagcagt	ttacagccag	tagaagggca	gtttaactgg												300
gaaccggcag	ataaacttgt	taagtttgcg	aaagaaaatg	gaatggacat	gcgcgcccat												360
acgcttgctt	ggcatagcca	agtaccagat	tggttcttca	aagatgcaaa	tgaaaattca												420
atggttggtt	ggcagaatgg	aaagcaagtg	gttgcatatc	cgtcaaatct	tgaggctaac												480
aaaaagcttt	tattaagccg	tttagaaaca	catgttaata	cagtcgtttc	tcgttataaa												540
aatgatatta	aattttggga	cgttgtcaat	gaagtaatcg	acgaatgggg	cggacatcct												600
gaagggttac	gtcaatctcc	atggttccta	attaccggaa	cggactatat	taaagtcgct												660
tttgagacag	caagacaata	tgctgctcca	gacgctaagc	tttatatcaa	tgattacaat												720
acagaagtaa	caccaaaaag	aacgtactta	tacaacctag	taaaaagttt	aaaacagcaa												780
ggtgttccaa	ttgatgggtg	tgggcatcag	tctcacattc	aaatcggctg	gccgtctgaa												840
aaagaaattg	aagacacaat	taacatgttt	gctgaactgg	ggttagacaa	ccaaattact												900
gagcttgatg	taagcatgta	tggctggcca	gtaaggcgct	atcctaccta	tgattctatt												960
ccagcacaga	aatttataga	tcaagcagac	cgatatgatc	gtttatttaa	attatatgag												1020
aaattaggcg	ataaaatcag	caatgtgaca	ttctggggaa	ttgctgataa	ccatacatgg												1080
ttaaattgacc	gtgcagatgt	ttactatgat	gcagatggaa	acgttgtaac	attggcaaat												1140
gcaccatatg	ctaaaatgga	agctagatca	ggtaaagatg	caccatttgt	atttgatcca												1200
gaatacaatg	taaaaccagc	ctattgggcg	attatcgacc	acaaataa													1248

<210> 78
 <211> 415
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<221> SIGNAL

<222> (1)...(27)

<400> 78

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Met Leu Lys Val Leu Arg Lys Pro Ile Val Ser Gly Leu Ala Leu Ala
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Leu Leu Leu Pro Ile Gly Ser Thr Val Ser Ala Glu Thr Asn Ile Ser
20      25      30
Asn Lys Pro Gly Ile Ser Gly Leu Thr Ala Pro Gln Leu Asp Gln Arg
35      40      45
Tyr Lys Asp Ser Phe Thr Ile Gly Ala Ala Val Glu Pro Asn Gln Leu
50      55      60
Leu Asp Ala Lys Asp Ser Gln Met Leu Lys Arg His Phe Asn Ser Ile
65      70      75      80
Val Ala Glu Asn Val Met Lys Pro Ser Ser Leu Gln Pro Val Glu Gly
85      90      95
Gln Phe Asn Trp Glu Pro Ala Asp Lys Leu Val Lys Phe Ala Lys Glu
100     105     110
Asn Gly Met Asp Met Arg Gly His Thr Leu Val Trp His Ser Gln Val
115     120     125
Pro Asp Trp Phe Phe Lys Asp Ala Asn Gly Asn Ser Met Val Val Trp
130     135     140
Gln Asn Gly Lys Gln Val Val Ala Asp Pro Ser Asn Leu Glu Ala Asn
145     150     155     160
Lys Lys Leu Leu Leu Ser Arg Leu Glu Thr His Val Asn Thr Val Val
165     170     175
Ser Arg Tyr Lys Asn Asp Ile Lys Phe Trp Asp Val Val Asn Glu Val
180     185     190
Ile Asp Glu Trp Gly Gly His Pro Glu Gly Leu Arg Gln Ser Pro Trp
195     200     205
Phe Leu Ile Thr Gly Thr Asp Tyr Ile Lys Val Ala Phe Glu Thr Ala
210     215     220
Arg Gln Tyr Ala Ala Pro Asp Ala Lys Leu Tyr Ile Asn Asp Tyr Asn
225     230     235     240
Thr Glu Val Thr Pro Lys Arg Thr Tyr Leu Tyr Asn Leu Val Lys Ser
245     250     255
Leu Lys Gln Gln Gly Val Pro Ile Asp Gly Val Gly His Gln Ser His
260     265     270
Ile Gln Ile Gly Trp Pro Ser Glu Lys Glu Ile Glu Asp Thr Ile Asn
275     280     285
Met Phe Ala Glu Leu Gly Leu Asp Asn Gln Ile Thr Glu Leu Asp Val
290     295     300
Ser Met Tyr Gly Trp Pro Val Arg Ala Tyr Pro Thr Tyr Asp Ser Ile
305     310     315     320
Pro Ala Gln Lys Phe Ile Asp Gln Ala Asp Arg Tyr Asp Arg Leu Phe
325     330     335
Lys Leu Tyr Glu Lys Leu Gly Asp Lys Ile Ser Asn Val Thr Phe Trp
340     345     350
Gly Ile Ala Asp Asn His Thr Trp Leu Asn Asp Arg Ala Asp Val Tyr
355     360     365
Tyr Asp Ala Asp Gly Asn Val Val Thr Leu Ala Asn Ala Pro Tyr Ala
370     375     380
Lys Met Glu Ala Arg Ser Gly Lys Asp Ala Pro Phe Val Phe Asp Pro
385     390     395     400
Glu Tyr Asn Val Lys Pro Ala Tyr Trp Ala Ile Ile Asp His Lys
405     410     415

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<210> 79

<211> 1293

<212> DNA

<213> Unknown

<220>

<223> obtained from an environmental sample

<400> 79

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gcgcttgccg cgctgtcatt gccggtatcg gctcaaatgg ctgcggggaa ggaaaagttc      120
gtgggtaacg tgatcgctgg ttatgtgccc ggtgattacg gcaatctctg gaatcagggtg      180

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acgccggaga	attccacca	gtgggggagcg	gttgagtcta	cgcgtaatgt	catgaactgg	240
acgcaggctg	atctggccta	caactacgcc	aagtccaagg	gcttcaagtt	caagatgcac	300
acgctgggat	ggggctcgca	agagccggcc	tgggtcaaga	atctggatgc	gacttcccag	360
cgtgtcgagg	tcgaacagtg	gatgcgtctg	agctgcgaac	gctaccccga	ttcctgggct	420
atcgatgtgg	tgaatgaacc	cctgcacgct	gtgccctcgt	acaagaacgc	actgggtggc	480
gatggtgcca	ccggctggga	ttgggtcatc	acctcgttcc	gtctggcgcg	tcagtactgt	540
ccgcgcgcca	agctgtgtct	caatgagtac	gccaccgagc	tggatgccag	caagcgcgcc	600
aagatcaaga	ccattgcctc	gctgtctcaag	agtcgcggtc	tgattgatgg	tgttggcctg	660
caggcccatt	tcttcacgct	ggattacatg	aatgccagcc	agatgaaggc	ggcactggat	720
gattacgcca	cgctgggtgt	ggatatctac	atttccgagc	tggatctgaa	gggcagtgcc	780
aataccgacg	ccagccagaa	ggcgaagtac	gaagagctgt	tcccgggtgat	gtggaatcac	840
gccagcgtga	agggcatcac	cctgtggggc	tacaaggtgg	gtgaaacctg	gtcgagcggc	900
accggcctgc	tgaatgcgaa	cggtagcgag	cgtccggccc	tgacctggct	gaaaagctat	960
atgagcagcc	gtcctgcagc	atcgagcagc	agttcttcga	gtgtttcatc	cagcaaattcc	1020
agttcgtctt	cttctagcca	gtccagtgcc	tccagcagtg	caggcagtcg	gccgggtcttg	1080
tccggcacca	gtgattaccc	gagcgggttc	agcaagtgtg	ccgatctggg	cggcacttgc	1140
agcgtgtctt	ccggcaccgg	ctgggcggcc	ttcgggcgca	agggtaagtg	ggttgccaaa	1200
tacgtcgggt	tgggcaagag	cattccctgc	acggtggcgg	cgtttggtcg	tgaccggggg	1260
ggcaatccca	acaagtgttc	cttccagagg	taa			1293

<210> 80

<211> 430

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample

<221> SIGNAL

<222> (1)...(36)

<400> 80

Met	Ile	Gly	Leu	Asp	Leu	Ile	Ser	Gly	Gly	Arg	Arg	Lys	Ala	Cys	Leu
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Ala	Ala	Cys	Leu	Ala	Leu	Ala	Ala	Leu	Ser	Leu	Pro	Val	Ser	Ala	Gln
			20					25					30		
Met	Ala	Ala	Gly	Lys	Glu	Lys	Phe	Val	Gly	Asn	Val	Ile	Ala	Gly	Tyr
		35					40					45			
Val	Pro	Gly	Asp	Tyr	Gly	Asn	Leu	Trp	Asn	Gln	Val	Thr	Pro	Glu	Asn
	50					55					60				
Ser	Thr	Lys	Trp	Gly	Ala	Val	Glu	Ser	Thr	Arg	Asn	Val	Met	Asn	Trp
65					70				75					80	
Thr	Gln	Ala	Asp	Leu	Ala	Tyr	Asn	Tyr	Ala	Lys	Ser	Lys	Gly	Phe	Lys
			85						90					95	
Phe	Lys	Met	His	Thr	Leu	Val	Trp	Gly	Ser	Gln	Glu	Pro	Ala	Trp	Val
			100					105					110		
Lys	Asn	Leu	Asp	Ala	Thr	Ser	Gln	Arg	Val	Glu	Val	Glu	Gln	Trp	Met
		115					120					125			
Arg	Leu	Ser	Cys	Glu	Arg	Tyr	Pro	Asp	Ser	Trp	Ala	Ile	Asp	Val	Val
	130					135					140				
Asn	Glu	Pro	Leu	His	Ala	Val	Pro	Ser	Tyr	Lys	Asn	Ala	Leu	Gly	Gly
145					150				155					160	
Asp	Gly	Ala	Thr	Gly	Trp	Asp	Trp	Val	Ile	Thr	Ser	Phe	Arg	Leu	Ala
			165						170					175	
Arg	Gln	Tyr	Cys	Pro	Arg	Ala	Lys	Leu	Leu	Leu	Asn	Glu	Tyr	Ala	Thr
			180					185					190		
Glu	Leu	Asp	Ala	Ser	Lys	Arg	Ala	Lys	Ile	Lys	Thr	Ile	Ala	Ser	Leu
		195					200					205			
Leu	Lys	Ser	Arg	Gly	Leu	Ile	Asp	Gly	Val	Gly	Leu	Gln	Ala	His	Phe
	210					215					220				
Phe	Thr	Leu	Asp	Tyr	Met	Asn	Ala	Ser	Gln	Met	Lys	Ala	Ala	Leu	Asp
225					230				235					240	
Asp	Tyr	Ala	Thr	Leu	Gly	Val	Asp	Ile	Tyr	Ile	Ser	Glu	Leu	Asp	Leu
			245					250						255	
Lys	Gly	Ser	Ala	Asn	Thr	Asp	Ala	Ser	Gln	Lys	Ala	Lys	Tyr	Glu	Glu
			260				265						270		
Leu	Phe	Pro	Val	Met	Trp	Asn	His	Ala	Ser	Val	Lys	Gly	Ile	Thr	Leu
		275					280					285			
Trp	Gly	Tyr	Lys	Val	Gly	Glu	Thr	Trp	Ser	Ser	Gly	Thr	Gly	Leu	Leu

290	Asn	Ala	Asn	Gly	Ser	Glu	Arg	Pro	Ala	Leu	Thr	Trp	Leu	Lys	Ser	Tyr
305	Met	Ser	Ser	Arg	Pro	Ala	Ala	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Val	Ser
	Ser	Ser	Lys	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Gln	Ser	Ser	Ala	Ser	Ser
	Ser	Ala	Gly	Ser	Ala	Pro	Val	Leu	Ser	Gly	Thr	Ser	Asp	Tyr	Pro	Ser
	Gly	Phe	Ser	Lys	Cys	Ala	Asp	Leu	Gly	Gly	Thr	Cys	Ser	Val	Ser	Ser
	Gly	Thr	Gly	Trp	Ala	Ala	Phe	Gly	Arg	Lys	Gly	Lys	Trp	Val	Ala	Lys
385	Tyr	Val	Gly	Val	Gly	Lys	Ser	Ile	Pro	Cys	Thr	Val	Ala	Ala	Phe	Gly
	Arg	Asp	Pro	Gly	Gly	Asn	Pro	Asn	Lys	Cys	Ser	Phe	Gln	Arg		

<210> 81
 <211> 1017
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 81	ttgaccacga	gagctattcg	cacggaggca	gcgctgaagg	agatgtttgc	ggaggacttt	60
	cagatcggag	ccgctgttaa	tccgatgact	atacggacac	aggaggagct	gcttgcttat	120
	cacttcaaca	gtattacggc	agagaatgaa	atgaagtttg	ccagtctgca	gccggaggag	180
	ggggccttatg	cttttgacga	ggcggatcga	ttggcggcct	tcgcccggaa	gcatggcatg	240
	gcgatgcggg	gacacacttt	agtgtggcat	aaccagtcca	caggctggct	gttcgaagac	300
	aagcagggaa	atcctgtaga	taaggcaact	ctgctggaga	ggctgaaatc	gcacatccat	360
	acggtagtag	gacgttataa	aaacgatatt	tatgcttggg	atgtggtaaa	cgaggttata	420
	gaggacgagg	gagacggcct	gctgcgccgg	tcgaaatggc	tggatattgc	cggaccggaa	480
	ttcattgccc	ggcggttcga	gtatgctcat	gaggctgacc	ctaattgcgt	gctcttctat	540
	aatgactaca	acgagtccaa	tccggcgaag	cgagacaaga	tccatgctct	ggtgaagtcg	600
	ctgctggagc	aaggcgtgcc	tattcatggc	attggactgc	aggcgcattg	gaatttgtat	660
	ggtccttctc	tcggcgagat	ccgagcggca	ctggagaagt	atgcttctct	tggcctgcag	720
	ctgcagctta	cggagctgga	tatgtcgcgt	tttcgttttg	acgacaagcg	tacggatata	780
	accgagcctc	cggcggaatt	gcttgagctg	caggctgagc	ggtatgagga	aattttcaag	840
	ctgctgaggg	aataccggga	tgtaatcact	tccgtgacct	tctggggggc	tgcgatgat	900
	tatacgtggc	tgaacgattt	tcccgtccgg	gggcggaaaa	attggccttt	cctgttcgat	960
	gagcagcatc	accccaaact	ggcatttcat	cgggtcgcgt	cactttcccg	ccagtga	1017

<210> 82
 <211> 338
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 82	Leu	Thr	Thr	Arg	Ala	Ile	Arg	Thr	Glu	Ala	Ala	Leu	Lys	Glu	Met	Phe
1	Ala	Glu	Asp	Phe	Gln	Ile	Gly	Ala	Ala	Val	Asn	Pro	Met	Thr	Ile	Arg
	Thr	Gln	Glu	Glu	Leu	Leu	Ala	Tyr	His	Phe	Asn	Ser	Ile	Thr	Ala	Glu
	Asn	Glu	Met	Lys	Phe	Ala	Ser	Leu	Gln	Pro	Glu	Glu	Gly	Ala	Tyr	Ala
	Phe	Asp	Glu	Ala	Asp	Arg	Leu	Ala	Ala	Phe	Ala	Arg	Lys	His	Gly	Met
65	Ala	Met	Arg	Gly	His	Thr	Leu	Val	Trp	His	Asn	Gln	Ser	Thr	Gly	Trp
	Leu	Phe	Glu	Asp	Lys	Gln	Gly	Asn	Pro	Val	Asp	Lys	Ala	Thr	Leu	Leu
	Glu	Arg	Leu	Lys	Ser	His	Ile	His	Thr	Val	Val	Gly	Arg	Tyr	Lys	Asn

Asp	Ile	Tyr	Ala	Trp	Asp	Val	Val	Asn	Glu	Val	Ile	Glu	Asp	Glu	Gly
130	115					120					125				
Asp	Gly	Leu	Leu	Arg	Arg	Ser	Lys	Trp	Leu	Asp	Ile	Ala	Gly	Pro	Glu
145					150					155	140				160
Phe	Ile	Ala	Arg	Ala	Phe	Glu	Tyr	Ala	His	Glu	Ala	Asp	Pro	Asn	Ala
			165						170					175	
Leu	Leu	Phe	Tyr	Asn	Asp	Tyr	Asn	Glu	Ser	Asn	Pro	Ala	Lys	Arg	Asp
			180					185					190		
Lys	Ile	His	Ala	Leu	Val	Lys	Ser	Leu	Leu	Glu	Gln	Gly	Val	Pro	Ile
		195				200						205			
His	Gly	Ile	Gly	Leu	Gln	Ala	His	Trp	Asn	Leu	Tyr	Gly	Pro	Ser	Leu
	210				215						220				
Gly	Glu	Ile	Arg	Ala	Ala	Leu	Glu	Lys	Tyr	Ala	Ser	Leu	Gly	Leu	Gln
225				230						235					240
Leu	Gln	Leu	Thr	Glu	Leu	Asp	Met	Ser	Leu	Phe	Arg	Phe	Asp	Asp	Lys
			245					250					255		
Arg	Thr	Asp	Ile	Thr	Glu	Pro	Pro	Ala	Glu	Leu	Leu	Glu	Leu	Gln	Ala
			260					265					270		
Glu	Arg	Tyr	Glu	Glu	Ile	Phe	Lys	Leu	Leu	Arg	Glu	Tyr	Arg	Asp	Val
		275					280					285			
Ile	Thr	Ser	Val	Thr	Phe	Trp	Gly	Ala	Ala	Asp	Asp	Tyr	Thr	Trp	Leu
	290				295						300				
Asn	Asp	Phe	Pro	Val	Arg	Gly	Arg	Lys	Asn	Trp	Pro	Phe	Leu	Phe	Asp
305					310					315					320
Glu	Gln	His	His	Pro	Lys	Leu	Ala	Phe	His	Arg	Val	Ala	Ala	Leu	Ser
			325						330					335	
Arg	Gln														

<210> 83
 <211> 3024
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 83						
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tcggggccggt	acttcggcac	ggcgatagct	gccggcaagc	tcggcgactc	gacctacacg	180
accattgccca	accgtgagtt	caacatgata	acggctgaga	atgagatgaa	gatcgacgcc	240
accgagccga	accagaacca	attcaacttc	accaacgccg	accggatctt	caactgggcg	300
gtgcagaatg	ggaagcaggt	gcgcgggac	acgctggcat	ggcactcgca	gcagccgggg	360
tggatgagca	gcatgagcgg	caccgcgctg	cgcaatgcga	tgatcaacca	catcaatggg	420
gtgatggccc	actacaaggg	caggatctac	gcctgggagt	tggtgaacga	ggctttcaac	480
gaggacggca	gccgccgcaa	ctcgaacctg	cagcagaccg	gcaacgactg	gatcgaggtg	540
gccttcggga	cagcccgcac	cgccgacccg	gccgccaagc	tgtgctacaa	cgactacaac	600
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tcccgcggcg	tgccgatcga	ctgtgtcggg	ttccagagcc	acttcaacag	cggcacttcc	720
tacgtcaaca	gcaacttccg	gacgacgctg	caaagcttcg	ccgcgctggg	cgtggacgtg	780
cagatcacccg	agctggatgt	cgagaatgcc	gactcgcggc	tcgattgggtg	gagaggcatc	840
gtcaatgact	gcctggcggt	cccgcgctgc	aacggcatca	cggtgtgggg	cgtgcgcgac	900
agcgattcgt	ggcgctcttc	gcagaacctg	ctgctgttca	actccagcgg	tggttaagaag	960
gcttcgtaca	ccgccgtcct	cgacgccttc	aacgctgccc	cgaccgtcac	acctccggta	1020
acgacacctc	cggtgacgac	accgccagtg	accacgcctc	ctcccggcac	tgtgtcgatt	1080
aacgcggggcg	gctcggcgag	cggcagcttc	acggccgacc	agtacttcag	cggtggcagc	1140
acctacacca	acaccgccac	catcgacatg	agtcagatca	ccagcaaccc	accgccggcg	1200
gcgggtcttca	acagcgagcg	ttacggggcg	atgacctaca	ccatcccca	ccgctcgggt	1260
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gcgggtggca	cgcctccacc	gacaacgcct	ccgcccacca	cgccgcccac	gaccaccctt	1560
ccggtgacga	cacccccagt	gacgacaccc	ccagtgcaga	caccgcccc	cggcagcggtg	1620
tcgatcaacg	cgggcggtc	ggccaccggc	agcttcacgg	gcgaccagta	cttagcggtg	1680
ggcagcacct	acaccaacac	cgccaccatc	gacatgagcg	agatcaccag	caaccacca	1740
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ggcgaggtgg	tgatccagtt	cacggcggtc	accgagaacc	ccaagatcaa	cgccatcact	2040
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aatggcaca	tgaccatttc	aagtggcggc	gtcaaccgca	cctacatcct	acgcacgcct	2400
gacaactaca	acaacacgca	tgataaccgg	ctgatcatgg	cttatcactg	gcttaacggc	2460
agcgcgcaga	atgtggcgag	cgagaactac	taccggctgt	tcccactctc	caacaacagc	2520
accatcttcg	tggcgcttca	ggggctggat	gccggatggg	ctaacaccaa	caaccgcgac	2580
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cgggtctggg	ccaccgggtt	cagctacggc	gcaggtatgt	catacgccat	cgctgtgcc	2700
agggccaatg	tgttccgggg	cgctcgctctc	tatgccggcg	cgcagctcag	cggttgcacc	2760
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aaccctcccg	agccttcctc	gggcagcggg	acgcacatct	gcacgtccta	ccagaactgc	2940
tcggcaggac	atcctgtccg	gtggtgcgcg	ttcgacggcg	accacacccc	gaatcagacc	3000
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<210> 84

<211> 1007

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample

<221> SIGNAL

<222> (1)...(30)

<400> 84

Met	Lys	Thr	Lys	Arg	Ser	Ile	Phe	Arg	Leu	Ser	Ile	Leu	Val	Val	Leu
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Ala	Val	Leu	Leu	Phe	Ser	Ala	Ile	Thr	Leu	Thr	Ala	Ser	Ala	Ala	Asp
			20					25					30		
Thr	Leu	Gly	Ala	Ala	Ala	Ala	Gln	Ser	Gly	Arg	Tyr	Phe	Gly	Thr	Ala
		35					40					45			
Ile	Ala	Ala	Gly	Lys	Leu	Gly	Asp	Ser	Thr	Tyr	Thr	Thr	Ile	Ala	Asn
	50					55					60				
Arg	Glu	Phe	Asn	Met	Ile	Thr	Ala	Glu	Asn	Glu	Met	Lys	Ile	Asp	Ala
65				70					75					80	
Thr	Glu	Pro	Asn	Gln	Asn	Gln	Phe	Asn	Phe	Thr	Asn	Ala	Asp	Arg	Ile
			85						90					95	
Phe	Asn	Trp	Ala	Val	Gln	Asn	Gly	Lys	Gln	Val	Arg	Gly	His	Thr	Leu
			100					105					110		
Ala	Trp	His	Ser	Gln	Gln	Pro	Gly	Trp	Met	Ser	Ser	Met	Ser	Gly	Thr
		115					120					125			
Ala	Leu	Arg	Asn	Ala	Met	Ile	Asn	His	Ile	Asn	Gly	Val	Met	Ala	His
	130					135					140				
Tyr	Lys	Gly	Arg	Ile	Tyr	Ala	Trp	Asp	Val	Val	Asn	Glu	Ala	Phe	Asn
145				150					155						160
Glu	Asp	Gly	Ser	Arg	Arg	Asn	Ser	Asn	Leu	Gln	Gln	Thr	Gly	Asn	Asp
			165						170					175	
Trp	Ile	Glu	Val	Ala	Phe	Arg	Thr	Ala	Arg	Thr	Ala	Asp	Pro	Ala	Ala
			180				185						190		
Lys	Leu	Cys	Tyr	Asn	Asp	Tyr	Asn	Ile	Glu	Ala	Trp	Ser	Tyr	Ala	Lys
		195					200					205			
Thr	Gln	Gly	Val	Tyr	Arg	Met	Val	Gln	Asp	Phe	Lys	Ser	Arg	Gly	Val
	210					215					220				
Pro	Ile	Asp	Cys	Val	Gly	Phe	Gln	Ser	His	Phe	Asn	Ser	Gly	Thr	Ser
225				230						235					240
Tyr	Val	Asn	Ser	Asn	Phe	Arg	Thr	Thr	Leu	Gln	Ser	Phe	Ala	Ala	Leu
				245					250					255	
Gly	Val	Asp	Val	Gln	Ile	Thr	Glu	Leu	Asp	Val	Glu	Asn	Ala	Asp	Ser
			260				265					270			
Arg	Leu	Asp	Trp	Trp	Arg	Gly	Ile	Val	Asn	Asp	Cys	Leu	Ala	Val	Pro

Arg	Cys	275	Asn	Gly	Ile	Thr	Val	280	Trp	Gly	Val	Arg	Asp	285	Ser	Asp	Ser	Trp
Arg	290	Ser	Ser	Gln	Asn	Pro	295	Leu	Leu	Phe	Asn	Ser	300	Ser	Gly	Gly	Lys	Lys
305	Ala	Ser	Tyr	Thr	Ala	Val	310	Leu	Asp	Ala	Leu	Asn	315	Ala	Ala	Pro	Thr	Val
					325						330						335	
Thr	Pro	Pro	Val	Thr	Thr	Pro	Pro	Val	Thr	Thr	Pro	Pro	Val	Thr	Thr			
			340							345								
Pro	Pro	Pro	Gly	Thr	Val	Ser	Ile	360	Asn	Ala	Gly	Gly	Ser	365	Ala	Ser	Gly	
			355															
Ser	Phe	Thr	Ala	Asp	Gln	Tyr	Phe	375	Ser	Gly	Gly	Ser	380	Thr	Tyr	Thr	Asn	
Thr	Ala	Thr	Ile	Asp	Met	390	Ser	Gln	Ile	Thr	Ser	395	Asn	Pro	Pro	Pro	Ala	
385																	400	
Ala	Val	Phe	Asn	Ser	Glu	Arg	Tyr	Gly	Ala	Met	410	Thr	Tyr	Thr	Ile	Pro		
					405													
Asn	Arg	Ser	Gly	Ala	Gln	Thr	Val	425	Thr	Leu	Tyr	Phe	Ala	Glu	Thr	Tyr		
Leu	Thr	Ala	Ala	Gly	Gln	Arg	Ser	440	Phe	Asn	Val	Ser	Ile	445	Asn	Gly	Ala	
Ala	Ala	Leu	Ser	Asn	Phe	Asp	Ile	455	Tyr	Ala	Ser	Ala	460	Gly	Gly	Ala	Asn	
Arg	465	Ala	Ile	Ala	Arg	Thr	Phe	470	Ser	Thr	Thr	Ala	475	Asn	Ser	Ser	Gly	Gln
Val	Val	Ile	Gln	Phe	Thr	Ala	Val	485	Thr	Glu	490	Asn	Pro	Lys	Ile	Asn	Ala	
Ile	Thr	Val	Thr	Ala	Gly	Gly	Thr	500	Pro	Pro	Pro	Thr	Thr	Pro	Pro	Pro		
Thr	Thr	Pro	Pro	Pro	Thr	Thr	Pro	520	Pro	Val	Thr	Thr	Pro	525	Pro	Val	Thr	
Thr	Pro	Pro	Val	Thr	Thr	Pro	535	Pro	Pro	Gly	Ser	Val	540	Ser	Ile	Asn	Ala	
Gly	Gly	Ser	Ala	Thr	Gly	Ser	Phe	550	Thr	Gly	Asp	Gln	555	Tyr	Phe	Ser	Gly	
545																		
Gly	Ser	Thr	Tyr	Thr	Asn	Thr	Ala	565	Thr	Ile	570	Asp	Met	Ser	Gln	Ile	Thr	
Ser	Asn	Pro	Pro	Pro	Ala	Ala	Val	585	Phe	Asn	Ser	Glu	Arg	Tyr	Gly	Ala		
Met	Thr	Tyr	Thr	Ile	Pro	Gly	Arg	600	Ser	Gly	Ala	Gln	Thr	Val	Thr	Leu		
Tyr	Phe	Ala	Glu	Thr	Tyr	Val	615	Thr	Ala	Ala	Gly	Gln	Arg	Val	Phe	Asn		
Val	Ser	Val	Asn	Gly	Ala	Ala	Ala	630	Leu	Ser	Asn	Phe	635	Asp	Ile	Tyr	Ala	
625																		
Ser	Ala	Gly	Gly	Gln	Asn	Arg	Ala	645	Ile	Ala	Arg	Ser	Phe	Asn	Thr	Thr		
Ala	Asn	Ser	Ser	Gly	Gln	Val	Val	660	Ile	Gln	Phe	Thr	Ala	Val	Thr	Glu		
Asn	Pro	Lys	Ile	Asn	Ala	Ile	Thr	680	Val	Ala	Gly	Gly	Ile	685	Gly	Asp	Phe	
Gln	Thr	Leu	Thr	Val	Thr	Lys	Ser	695	Gly	Thr	Gly	Thr	Val	700	Thr	Ser	Asn	
Pro	Ala	Gly	Ile	Asn	Cys	Gly	Ser	710	Thr	Cys	Asn	Ala	Ser	Phe	Ala	Thr		
705																		
Gly	Thr	Ser	Val	Thr	Leu	Thr	Ala	725	Ser	Gly	Gly	Thr	Phe	Thr	Gly	Trp		
Ser	Gly	Ala	Cys	Ser	Gly	Thr	Ser	740	Thr	Cys	Thr	Val	Ser	750	Met	Thr		
Gln	Ala	Arg	Ser	Val	Thr	Ala	Thr	760	Phe	Ser	Gly	Gly	Gly	765	Asp	Thr	Arg	
Pro	Ser	Ala	Gly	Cys	Gly	Lys	Asn	775	Arg	Thr	Leu	Gln	Asn	Gly	Thr	Ile		
Thr	Ile	Ser	Ser	Gly	Gly	Val	Asn	790	Arg	Thr	Tyr	Ile	Leu	Arg	Thr	Pro		
785																		
Asp	Asn	Tyr	Asn	Asn	Thr	His	Ala	805	Tyr	Arg	Leu	Ile	Met	Ala	Tyr	His		
Trp	Leu	Asn	Gly	Ser	Ala	Gln	Asn	820	Val	Ala	Ser	Glu	Asn	Tyr	830	Tyr	Arg	

Leu Phe Pro Leu Ser Asn Asn Ser Thr Ile Phe Val Ala Pro Gln Gly
 835 840 845
 Leu Asp Ala Gly Trp Ala Asn Thr Asn Asn Arg Asp Leu Asn Leu Thr
 850 855 860
 Asp Ala Ile Leu Thr Gln Val Glu Asn Asp Leu Cys Val Asp Leu Asn
 865 870 875
 Arg Val Trp Ala Thr Gly Phe Ser Tyr Gly Ala Gly Met Ser Tyr Ala
 885 890 895
 Ile Ala Cys Ala Arg Ala Asn Val Phe Arg Gly Val Ala Leu Tyr Ala
 900 905 910
 Gly Ala Gln Leu Ser Gly Cys Thr Gly Gly Thr Thr Ala Ile Ala Tyr
 915 920 925
 Phe Ala Thr His Gly Ile Asn Asp Ser Val Leu Asn Ile Ser Gln Gly
 930 935 940
 Arg Thr Leu Arg Asp Arg Phe Val Ser Asn Asn Ser Cys Thr Ala Gln
 945 950 955
 Asn Pro Pro Glu Pro Ser Ser Gly Ser Gly Thr His Ile Cys Thr Ser
 965 970 975
 Tyr Gln Asn Cys Ser Ala Gly His Pro Val Arg Trp Cys Ala Phe Asp
 980 985 990
 Gly Asp His Thr Pro Asn Gln Thr Asp Arg Gly Gln Ser Thr Ser
 995 1000 1005

<210> 85
 <211> 1254
 <212> DNA
 <213> Bacteria

<400> 85
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 accctcgagt tctacgtgga c gatgtgaag gtagtggaca ccacctctgc tgagataaaa 180
 ctcgagatga atccagaaga ggaaatacca gccctcaggg aagttctgaa agactacttc 240
 agagtgggag ttgtctttcc atccaaggta ttcatcaacc agaaggactt aacgctcatc 300
 accaagcact tcaacagcat caccgcagaa aatgagatga aacctgatag tctgcttgca 360
 ggcatggaga atggcaaaact caagttcaga tttgaaacag cagacaaata catcgaattt 420
 gcacagcaaa acggcatggg tgtgaggggg cacacactgg tatggcacia tcagacgccc 480
 gagtgggtct tcaaagacga aaatggaaac ctctcttcca aagaagcgat gacagaaaga 540
 ctgagagaat acatacacac cgtcgttgga cacttcaaag ggaaggtcta cgcattggag 600
 gttgtgaacg aagcgggtcga tccgaaccag ccagatggac tgagaagatc cacctgggat 660
 cagatcatgg ggcctgacta catagaactt gccttcaagt ttgcaaggga ggcagatccc 720
 gatgcgaaac tcttctacaa cgactacaac accttcgaac ccaaaaagag agacatcatc 780
 tacaaccttg tgaagagtct caaggaaaag ggtctcatcg atggaatcgg tatgcagtgt 840
 cacatcagtc ttgcaacgga catcaggcag atcgaagagg ccatcaaaaa gttcagctcc 900
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 tccaactacc cagaggcacc gaggaacgca ctcatgaaac aggcctcacia gatggctcaa 1020
 ctctttgaaa tcttcaagaa atacagtaat gtgatcacia acgtcacggt ctgggggtctc 1080
 aaagacgact actcctggag agcaacaaga agaaatgact ggacattgat ctttgacaaa 1140
 gattatcagg caaaactcgc ttactgggagc attgtcgctc ctgaagtgtc accacctctt 1200
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<210> 86
 <211> 417
 <212> PRT
 <213> Bacteria

<400> 86
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 Lys Ser Trp Ser Ser Arg Ala Cys Arg Ser Thr Leu Val Asp Leu Thr
 20 25 30
 Leu Tyr Phe Glu Ser Gln Asn Pro Thr Leu Glu Phe Tyr Val Asp Asp
 35 40 45
 Val Lys Val Val Asp Thr Thr Ser Ala Glu Ile Lys Leu Glu Met Asn
 50 55 60
 Pro Glu Glu Glu Ile Pro Ala Leu Arg Glu Val Leu Lys Asp Tyr Phe
 65 70 75 80
 Arg Val Gly Val Ala Leu Pro Ser Lys Val Phe Ile Asn Gln Lys Asp
 85 90 95

Leu Thr Leu Ile Thr Lys His Phe Asn Ser Ile Thr Ala Glu Asn Glu
 100 105 110
 Met Lys Pro Asp Ser Leu Leu Ala Gly Ile Glu Asn Gly Lys Leu Lys
 115 120 125
 Phe Arg Phe Glu Thr Ala Asp Lys Tyr Ile Glu Phe Ala Gln Gln Asn
 130 135 140
 Gly Met Val Val Arg Gly His Thr Leu Val Trp His Asn Gln Thr Pro
 145 150 155 160
 Glu Trp Phe Phe Lys Asp Glu Asn Gly Asn Leu Leu Ser Lys Glu Ala
 165 170 175
 Met Thr Glu Arg Leu Arg Glu Tyr Ile His Thr Val Val Gly His Phe
 180 185 190
 Lys Gly Lys Val Tyr Ala Trp Asp Val Val Asn Glu Ala Val Asp Pro
 195 200 205
 Asn Gln Pro Asp Gly Leu Arg Arg Ser Thr Trp Tyr Gln Ile Met Gly
 210 215 220
 Pro Asp Tyr Ile Glu Leu Ala Phe Lys Phe Ala Arg Glu Ala Asp Pro
 225 230 235 240
 Asp Ala Lys Leu Phe Tyr Asn Asp Tyr Asn Thr Phe Glu Pro Lys Lys
 245 250 255
 Arg Asp Ile Ile Tyr Asn Leu Val Lys Ser Leu Lys Glu Lys Gly Leu
 260 265 270
 Ile Asp Gly Ile Gly Met Gln Cys His Ile Ser Leu Ala Thr Asp Ile
 275 280 285
 Arg Gln Ile Glu Glu Ala Ile Lys Lys Phe Ser Ser Ile Pro Gly Ile
 290 295 300
 Glu Ile His Ile Thr Glu Leu Asp Met Ser Val Tyr Arg Asp Ser Thr
 305 310 315 320
 Ser Asn Tyr Pro Glu Ala Pro Arg Asn Ala Leu Ile Glu Gln Ala His
 325 330 335
 Lys Met Ala Gln Leu Phe Glu Ile Phe Lys Lys Tyr Ser Asn Val Ile
 340 345 350
 Thr Asn Val Thr Phe Trp Gly Leu Lys Asp Asp Tyr Ser Trp Arg Ala
 355 360 365
 Thr Arg Arg Asn Asp Trp Thr Leu Ile Phe Asp Lys Asp Tyr Gln Ala
 370 375 380
 Lys Leu Ala Tyr Trp Ala Ile Val Ala Pro Glu Val Leu Pro Pro Leu
 385 390 395 400
 Ser Lys Glu Ser Lys Ile Gln Arg Ile Gln Lys Ala Ser Arg Glu Tyr
 405 410 415
 Phe

<210> 87
 <211> 1089
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 87
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 atcattgccg gcagtgtctc aagtaacttc accacctact ggaatcaggt caccctggag 180
 aacggcacca aatgggggtc catcgaaggc aaccgcaacc agatgaactg gggaaacgcg 240
 gacatgatct ataactacgc catcagcaaa aacatcccgt tcaaattcca tactctcgtc 300
 tggggaagcc aggagcccaa ctgggtggcc ggcttgtcgg cagcggagca gaaggcggaa 360
 atcagctcat tcattactca agcaggacag cgttattccg cgaagacagc ttttgtggat 420
 gtagtcaatg aaccgctgca tgccaagcct tcgtaccgca atgccatcgg cggcgatggc 480
 agcaccggct gggattgggt gatctggtct ttccagcaag cccgggcccgc cttcccgaac 540
 gccaaagctgc acctcaatga ctacggcatt atcggtgacc ccagcgcggc cgataaatat 600
 gtgaacatta tcaatatcct gaaatccaga ggactgatcg atggtattgg tattcagtgc 660
 cactacttca atatggataa cgtaagtgtg agcaccatga atactgtact gggtaaagctt 720
 gctgcaacag gcctgccaat ctatgtctcc gagctggata ttaccggtga tgacaacacc 780
 cagcttgcca gataccaaca gaaattccct gtgctctgga accatccttc cgtgaagggc 840
 gtcaccctgt ggggctacat ccaaaatcag acctgggcac caggcaccaca tctgggtgaat 900
 tccaacggca cagagcgccc tgccctgaag tggctgaagc aatacctggg cggctcgta 960
 gctctgatgg aaaccacaga cgcccaagac ctactatca ctgacagtct gatccagccg 1020

gacagtgtgg ttgagccgga ccctcaactg gatctccagc cgggtgcttga gcccgttccg 1080
gctgagtaa 1089

<210> 88
<211> 362
<212> PRT
<213> Unknown

<220>
<223> obtained from an environmental sample

<221> SIGNAL
<222> (1)...(29)

<400> 88
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Val Leu Leu Thr Ser Val Met Ala Gly Asn Ala Ser Ala Ala Ile Thr
20 25 30
Asn Gly Ser Lys Phe Leu Gly Asn Ile Ile Ala Gly Ser Ala Pro Ser
35 40 45
Asn Phe Thr Thr Tyr Trp Asn Gln Val Thr Pro Glu Asn Gly Thr Lys
50 55 60
Trp Gly Ser Ile Glu Gly Asn Arg Asn Gln Met Asn Trp Gly Asn Ala
65 70 75 80
Asp Met Ile Tyr Asn Tyr Ala Ile Ser Lys Asn Ile Pro Phe Lys Phe
85 90 95
His Thr Leu Val Trp Gly Ser Gln Glu Pro Asn Trp Val Ala Gly Leu
100 105 110
Ser Ala Ala Glu Gln Lys Ala Glu Ile Ser Ser Phe Ile Thr Gln Ala
115 120 125
Gly Gln Arg Tyr Ser Ala Lys Thr Ala Phe Val Asp Val Val Asn Glu
130 135 140
Pro Leu His Ala Lys Pro Ser Tyr Arg Asn Ala Ile Gly Gly Asp Gly
145 150 155 160
Ser Thr Gly Trp Asp Trp Val Ile Trp Ser Phe Gln Gln Ala Arg Ala
165 170 175
Ala Phe Pro Asn Ala Lys Leu His Leu Asn Asp Tyr Gly Ile Ile Gly
180 185 190
Asp Pro Ser Ala Ala Asp Lys Tyr Val Asn Ile Ile Asn Ile Leu Lys
195 200 205
Ser Arg Gly Leu Ile Asp Gly Ile Gly Ile Gln Cys His Tyr Phe Asn
210 215 220
Met Asp Asn Val Ser Val Ser Thr Met Asn Thr Val Leu Gly Lys Leu
225 230 235 240
Ala Ala Thr Gly Leu Pro Ile Tyr Val Ser Glu Leu Asp Ile Thr Gly
245 250 255
Asp Asp Asn Thr Gln Leu Ala Arg Tyr Gln Gln Lys Phe Pro Val Leu
260 265 270
Trp Asn His Pro Ser Val Lys Gly Val Thr Leu Trp Gly Tyr Ile Gln
275 280 285
Asn Gln Thr Trp Ala Ser Gly Thr His Leu Val Asn Ser Asn Gly Thr
290 295 300
Glu Arg Pro Ala Leu Lys Trp Leu Lys Gln Tyr Leu Gly Gly Ser Ser
305 310 315 320
Ala Leu Met Glu Thr Thr Asp Ala Gln Asp Leu Thr Ile Thr Asp Ser
325 330 335
Leu Ile Gln Pro Asp Ser Val Val Glu Pro Asp Pro Gln Leu Asp Leu
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Gln Pro Val Leu Glu Pro Val Pro Ala Glu
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<210> 89
<211> 2541
<212> DNA
<213> Bacteria

<400> 89
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<210> 90
 <211> 846
 <212> PRT
 <213> Bacteria

<220>
 <221> SIGNAL
 <222> (1)...(40)

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 35 40 45
 Ile Lys Gly Glu Tyr Asn Pro Leu Gly Ile Asn Ala Gly Val Ala Ile
 50 55 60
 Glu Thr Tyr Thr Leu Asn Gln Asp Lys Glu Lys Ala Leu Val Glu Asn
 65 70 75 80
 Phe Asp Gln Ile Thr Pro Glu Asn Ser Leu Lys Pro Glu Gly Trp Tyr
 85 90 95
 Asp Asp Gln His Asn Phe Arg Met Ser Asp Asp Ala Arg Asn Leu Leu
 100 105 110
 Thr Phe Ala Ser Glu Asn Gly Ile Lys Val Tyr Gly His Val Leu Val
 115 120 125

Trp	His	Ser	Gln	Thr	Pro	Asp	Trp	Phe	Phe	Gln	Ala	Asp	Glu	Trp	Cys
130	130					135					140				
His	Asp	Thr	Asn	Asp	Asn	Pro	Gly	Val	Thr	Ser	Cys	Pro	Leu	Ala	Asp
145					150					155					160
Lys	Ala	Thr	Met	Gln	Glu	Arg	Gln	Arg	Arg	His	Ile	Glu	Asn	Val	Ala
				165					170					175	
Glu	Ala	Ile	Ser	Asp	Glu	Phe	Gly	Lys	Phe	Gly	Ser	Pro	Thr	Asn	Pro
			180					185					190		
Val	Val	Ala	Phe	Asp	Val	Val	Asn	Glu	Thr	Val	Asn	Asp	Ser	Asp	Asp
			195				200					205			
Pro	Ala	Thr	Asn	Gly	Met	Arg	Asn	Ser	Leu	Trp	Tyr	Gln	Thr	Tyr	Gly
	210					215					220				
Gly	Glu	Asp	Tyr	Ile	Tyr	Asp	Ala	Phe	Arg	Asn	Ala	Asn	Thr	Tyr	Leu
225					230					235					240
Asn	Asp	Val	Tyr	Ala	Ala	Asp	Asp	Ala	Glu	His	Pro	Val	Thr	Leu	Phe
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Ala	Leu	Leu	Glu	Arg	Met	Ile	Gln	Gln	Gly	Val	Pro	Phe	Asp	Gly	Ile
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Gly	His	Gln	Phe	His	Val	Ser	Leu	Thr	Thr	Ala	Ser	Ser	Asn	Leu	Asp
	290					295					300				
Asp	Ala	Leu	Thr	Asp	Met	Ser	Ser	Leu	Gly	Lys	Lys	Gln	Ala	Ile	Thr
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Glu	Leu	Asp	Val	Ala	Thr	Gly	Thr	Pro	Val	Thr	Glu	Ala	Lys	Leu	Ile
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Glu	Gln	Gly	Arg	Tyr	Tyr	Tyr	Asp	Val	Asn	Gln	Ile	Ile	His	Arg	His
			340					345					350		
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Ser	Trp	Arg	Asn	Lys	Glu	Gly	Ala	Pro	Leu	Leu	Phe	Asp	Asp	Asn	Leu
	370					375					380				
Glu	Lys	Lys	Pro	Ala	Tyr	Ile	Gly	Tyr	Ile	Gly	Asp	Ser	Ala	Asn	Leu
385					390					395					400
Pro	Glu	Pro	Leu	Lys	Ser	Met	Asn	Ala	Phe	Lys	Asp	Asp	Ala	Val	Gly
				405					410					415	
Ile	Asp	Ser	Ala	Leu	Pro	Gly	Thr	Val	Ala	Glu	Ser	Gly	Ala	Ser	Ser
			420					425					430		
Pro	Trp	Glu	Arg	Leu	Ser	Leu	Val	Glu	Met	Thr	Pro	Ser	Ala	Tyr	Asp
		435					440					445			
Ala	Val	Ser	Gly	Ser	Phe	Asn	Val	Tyr	Trp	Lys	Asp	Gly	Ser	Leu	Val
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Val	Tyr	Ala	Asp	Val	Ala	Asp	Ala	Ser	Ala	Ala	Asp	Asp	Asp	Thr	Val
465					470					475					480
Thr	Val	Arg	Val	Gly	Asp	Ala	Glu	Tyr	Thr	Ile	Gly	Arg	Asn	Gly	Val
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Thr	Gly	Gly	Glu	Gly	Val	Gln	Ala	Asn	Val	Val	Ser	Ser	Asp	Ala	Gly
			500					505					510		
Tyr	Glu	Val	Val	Ala	Asp	Ile	Pro	Tyr	Thr	Gly	Ala	Glu	Lys	Asp	Ile
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Val	Glu	Met	Asn	Val	Ile	Ala	Thr	Asp	Ser	Ala	Thr	Thr	Glu	Thr	Ser
	530					535					540				
Ala	Trp	Ser	Thr	Asn	Asp	Thr	Gly	Ala	Val	Thr	Leu	Ala	Glu	Pro	Leu
545					550					555					560
Ser	Tyr	Thr	Glu	Ala	Val	Lys	Val	Pro	Ala	Asp	Ala	Gln	Ala	Pro	Val
				565					570					575	
Val	Asp	Ala	Asp	Pro	Ser	Asp	Ser	Val	Trp	Ala	Glu	Ala	Asn	Glu	Val
			580					585					590		
Pro	Val	Gly	Lys	Val	Thr	Ala	Ala	Thr	Pro	Ser	Pro	Glu	Ala	Thr	Ala
		595					600					605			
Thr	Ala	Lys	Thr	Leu	Trp	Ser	Asp	Gly	Lys	Leu	Tyr	Val	Leu	Met	Glu
	610					615					620				
Val	Thr	Asp	Ala	Asp	Ile	Asp	Leu	Thr	Asn	Ser	Asn	Pro	Trp	Glu	Lys
625					630					635					640
Asp	Ser	Val	Glu	Val	Tyr	Ile	Asp	Arg	Gly	Asn	Thr	Lys	Ser	Gly	Gln
				645					650					655	
Tyr	Thr	Asn	Asp	Ile	Gln	Gln	Ile	Arg	Val	Ser	Ala	Asp	Gly	Ala	Glu
			660					665					670		
Leu	Ser	Phe	Gly	Ser	Gly	Ala	Ser	Glu	Asp	Val	Gln	Lys	Ser	Met	Val

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Gln Thr Ala Gly Lys Leu Val Asp Gly Gly Tyr Val Val Glu Met Ala
 690      695      700
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 705      710      715      720
Gln Ile Asn Asp Ala Lys Asn Gly Ala Arg Ile Gly Ile Arg Asn Trp
      725      730      735
Ala Asp Pro Thr Gly Ala Gly Tyr Gln Thr Ala Ser His Trp Gly Val
      740      745      750
Leu Arg Leu Leu Ala Asp Pro Ser Glu Thr Glu Thr Pro Gly Gly Glu
      755      760      765
Asp Pro Glu Thr Pro Gly Asp Glu Glu Thr Pro Gly Glu Asp Thr Glu
      770      775      780
Lys Pro Gly Asp Glu Glu Thr Pro Gly Glu Asp Thr Glu Lys Pro Gly
 785      790      795      800
Asp Glu Lys Pro Arg Pro Ser Asp Asp Ala Asp Asn Asp Asp Lys Met
      805      810      815
Pro Gln Thr Gly Ser Ala Val Ile Gly Ile Ala Val Val Ala Leu Leu
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Leu Val Ala Ala Gly Cys Gly Leu Val Ile Ala Arg Arg Arg
      835      840      845

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<210> 91
 <211> 1023
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

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<400> 91
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ttaaacagca ttacggcgga aaacgaaatg aagttcgcca gcgtccatcc agaggaagag      180
ctttacacct tcgaggaagc ggatcagatc gtggacttcg cgcgcaaaca cgggatggct      240
gtccgcggac atacgctggt atggcataac cagaccaccg attggttggt ccgcgacaag      300
cagaatcagc tcgtgagcaa agccgtgctt tatgaaagaa tccgttcgca tatccaaacg      360
gtagtaggca gatataaggg cgatatattac gcttgggacg ttgtgaacga ggtcattgcc      420
gatgacggcg atcagttgct gcgtacctcc agctggacgg aaatcgccgg ggacgaattc      480
atcgccaaag cgtttgaata cgcgcatgct gccgaccgga atgcgctggt gttctacaac      540
gactacaatg agtcccatcc aagcaaacgg gataaaattt ataccttggt caagtctctt      600
ctggaccggg gagtacctat tcacggcatc gccctgcagg cacactggaa tctgttcaac      660
ccgtccttgg atgacatccg ggcagccatc gaaaaatatg cttcgctagg attgcagctc      720
cagctcacgg aactggatgt gtcggtattc cgtttcgaag ataagcgggc cgatctgacc      780
gagcctgaac cgggaatgct ggaacagcag gctgaattct acgaagccgt gttcaagctg      840
cttaaggaat acagcgatgt aattagcgcg gtgacgttct ggggagctgc ggacgaccac      900
acctggctca gcgattttcc ggtacgtggg cgcaaaaact ggccgctgct gttcgatgag      960
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tga                                                    1023

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<210> 92
 <211> 340
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

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<400> 92
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      20      25      30
Gln Glu Ser Leu Leu Thr His His Phe Asn Ser Ile Thr Ala Glu Asn
      35      40      45
Glu Met Lys Phe Ala Ser Val His Pro Glu Glu Glu Leu Tyr Thr Phe
      50      55      60
Glu Glu Ala Asp Gln Ile Val Asp Phe Ala Arg Lys His Gly Met Ala
 65      70      75      80

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Val Arg Gly His Thr Leu Val Trp His Asn Gln Thr Thr Asp Trp Leu
 85 90 95
 Phe Arg Asp Lys Gln Asn Gln Leu Val Ser Lys Ala Val Leu Tyr Glu
 100 105 110
 Arg Ile Arg Ser His Ile Gln Thr Val Val Gly Arg Tyr Lys Gly Asp
 115 120 125
 Ile Tyr Ala Trp Asp Val Val Asn Glu Val Ile Ala Asp Asp Gly Asp
 130 135 140
 Gln Leu Leu Arg Thr Ser Trp Thr Glu Ile Ala Gly Asp Glu Phe
 145 150 155 160
 Ile Ala Lys Ala Phe Glu Tyr Ala His Ala Ala Asp Pro Asn Ala Leu
 165 170 175
 Leu Phe Tyr Asn Asp Tyr Asn Glu Ser His Pro Ser Lys Arg Asp Lys
 180 185 190
 Ile Tyr Thr Leu Val Lys Ser Leu Leu Asp Arg Gly Val Pro Ile His
 195 200 205
 Gly Ile Gly Leu Gln Ala His Trp Asn Leu Phe Asn Pro Ser Leu Asp
 210 215 220
 Asp Ile Arg Ala Ala Ile Glu Lys Tyr Ala Ser Leu Gly Leu Gln Leu
 225 230 235 240
 Gln Leu Thr Glu Leu Asp Val Ser Val Phe Arg Phe Glu Asp Lys Arg
 245 250 255
 Ala Asp Leu Thr Glu Pro Glu Pro Gly Met Leu Glu Gln Gln Ala Glu
 260 265 270
 Phe Tyr Glu Ala Val Phe Lys Leu Leu Lys Glu Tyr Ser Asp Val Ile
 275 280 285
 Ser Ala Val Thr Phe Trp Gly Ala Ala Asp Asp His Thr Trp Leu Ser
 290 295 300
 Asp Phe Pro Val Arg Gly Arg Lys Asn Trp Pro Leu Leu Phe Asp Glu
 305 310 315 320
 Arg His Arg Pro Lys Pro Ala Tyr Tyr Arg Leu Ala Ala Leu Ala Asn
 325 330 335
 His Leu Arg Arg
 340

<210> 93
 <211> 1011
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 93
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 aaacatttta atagtataac ggctgagaat gaaatgaaat ttgaagcatt acagcctaaa 180
 ccagatcaat ttacatttga tacggcggat aaaatgggtt cctttgcccc agcacatgat 240
 atgaagatgc gtggccatac attaatcttg cacaatcaaa caccagattg gatgtttttg 300
 caaaaagacg gtacgacaat tgatcgtgaa acactccttg agagaatgaa aaaacatatt 360
 aagacgggtg ttgaaagata taaaggcaaa atatattgtt gggacgttgt aaatgaagcg 420
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 tctgtttattg agtatgcttt taaatacgcc cacgaggccg atcccgatgc actgttggtt 540
 tacaatgact acaatgcttg ccaccctcat aaaagagata agatttatca acttgtaaag 600
 ggggttaatag acaagggtgt gccatacac ggtattggcc tacaagcaca ttggaacatt 660
 gttgacccgt cttacgatga tattaacga gccatcgaaa cttatgcac attaggatta 720
 agcatacact ttactgaaat ggatgtgtct gtttttgaat atcatgatcg aagaacagac 780
 ttatttgaac ctacaaaaga tatgtgtttc cgtcaagctg agcgttatca ggcatttttt 840
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 gattatacat ggcttgatga ttttcggtg acaggtcgaa aaaattggcc ctttgtattt 960
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<210> 94
 <211> 336
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample
 Page 76

<400> 94

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 20 25 30
 Gly Thr Gln Lys Lys Leu Leu Thr Lys His Phe Asn Ser Ile Thr Ala
 35 40 45
 Glu Asn Glu Met Lys Phe Glu Ala Leu Gln Pro Lys Pro Asp Gln Phe
 50 55 60
 Thr Phe Asp Thr Ala Asp Lys Met Val Ala Phe Ala Gln Ala His Asp
 65 70 75 80
 Met Lys Met Arg Gly His Thr Leu Ile Trp His Asn Gln Thr Pro Asp
 85 90 95
 Trp Met Phe Leu Gln Lys Asp Gly Thr Thr Ile Asp Arg Glu Thr Leu
 100 105 110
 Leu Glu Arg Met Lys Lys His Ile Lys Thr Val Val Glu Arg Tyr Lys
 115 120 125
 Gly Lys Ile Tyr Cys Trp Asp Val Val Asn Glu Ala Val Ala Asp Glu
 130 135 140
 Gly Glu Ala Ile Leu Arg Pro Ser Lys Trp Thr Asp Ile Ile Gly Asp
 145 150 155 160
 Ser Phe Ile Glu Tyr Ala Phe Lys Tyr Ala His Glu Ala Asp Pro Asp
 165 170 175
 Ala Leu Leu Phe Tyr Asn Asp Tyr Asn Ala Cys His Pro His Lys Arg
 180 185 190
 Asp Lys Ile Tyr Gln Leu Val Lys Gly Leu Ile Asp Lys Gly Val Pro
 195 200 205
 Ile His Gly Ile Gly Leu Gln Ala His Trp Asn Ile Val Asp Pro Ser
 210 215 220
 Tyr Asp Asp Ile Lys Arg Ala Ile Glu Thr Tyr Ala Ser Leu Gly Leu
 225 230 235 240
 Ser Ile His Phe Thr Glu Met Asp Val Ser Val Phe Glu Tyr His Asp
 245 250 255
 Arg Arg Thr Asp Leu Leu Glu Pro Thr Lys Asp Met Val Ser Arg Gln
 260 265 270
 Ala Glu Arg Tyr Gln Ala Phe Phe Glu Ile Phe Arg Ser Tyr Ala Asp
 275 280 285
 Val Ile Asp Ser Val Thr Phe Trp Gly Met Ala Asp Asp Tyr Thr Trp
 290 295 300
 Leu Asp Asp Phe Pro Val Thr Gly Arg Lys Asn Trp Pro Phe Val Phe
 305 310 315 320
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 325 330 335

<210> 95

<211> 1143

<212> DNA

<213> Unknown

<220>

<223> obtained from an environmental sample

<400> 95

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gatccccagt	ctgaaaatat	tatcaaaaaa	cagttcaatt	ccatagtgtc	cgaaaactgc	240
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tttgtggatt	ttggtcttca	gaacaatatg	ttcatcatcg	ggcatgtgtc	gatttggcat	360
tgcgaggcgc	caaaatgggt	tttcaccgat	gagaatggaa	aaacgggttc	cccagaagtt	420
cttaaaca	ggatgaaagc	ccatatcacc	gctgtcgttt	cccgtacaa	agggaaaatc	480
aaaggttggg	atgtggtgaa	cgaagccatt	atggaagatg	gttcttaccg	caaaagcaaa	540
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ccgtttaacc	gacagtatca	ggcaaaacct	ttggtgcaga	aattaataga	cttaacgaaa	1140
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<210> 96
 <211> 380
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(24)

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 Val Lys Leu Thr Thr Leu Lys Glu Ala Tyr Gln Gly Lys Phe Tyr Ile
 35 40 45
 Gly Thr Ala Met Asn Leu Arg Gln Ile His Gly Asp Asp Pro Gln Ser
 50 55 60
 Glu Asn Ile Ile Lys Lys Gln Phe Asn Ser Ile Val Ala Glu Asn Cys
 65 70 75 80
 Met Lys Ser Met Tyr Leu Gln Pro Glu Glu Gly Lys Phe Phe Phe Asp
 85 90 95
 Asp Ala Asp Lys Phe Val Asp Phe Gly Leu Gln Asn Asn Met Phe Ile
 100 105 110
 Ile Gly His Cys Leu Ile Trp His Ser Gln Ala Pro Lys Trp Phe Phe
 115 120 125
 Thr Asp Glu Asn Gly Lys Thr Val Ser Pro Glu Val Leu Lys Gln Arg
 130 135 140
 Met Lys Ala His Ile Thr Ala Val Val Ser Arg Tyr Lys Gly Lys Ile
 145 150 155 160
 Lys Gly Trp Asp Val Val Asn Glu Ala Ile Met Glu Asp Gly Ser Tyr
 165 170 175
 Arg Lys Ser Lys Phe Tyr Glu Ile Leu Gly Glu Glu Phe Ile Pro Leu
 180 185 190
 Ala Phe Gln Tyr Ala His Glu Ala Asp Pro Asp Ala Glu Leu Tyr Tyr
 195 200 205
 Asn Asp Tyr Asn Glu Trp Tyr Pro Gly Lys Arg Ala Thr Val Thr Lys
 210 215 220
 Ile Ile Arg Asp Phe Lys Ser Arg Gly Ile Arg Ile Asp Ala Ile Gly
 225 230 235 240
 Met Gln Ala His Phe Gly Met Asp Ser Pro Thr Leu Glu Glu Tyr Glu
 245 250 255
 Gln Thr Ile Gln Gly Tyr Ile Lys Glu Gly Val Lys Val Asn Ile Thr
 260 265 270
 Glu Leu Asp Leu Ser Pro Leu Pro Ser Pro Trp Gly Thr Ser Ala Asn
 275 280 285
 Val Ala Asp Thr Gln Gln Tyr Gln Glu Lys Met Asn Pro Tyr Thr Lys
 290 295 300
 Gly Leu Pro Ala Asp Val Glu Lys Ala Trp Glu Asn Arg Tyr Leu Asp
 305 310 315 320
 Phe Phe Lys Leu Phe Leu Lys Tyr His Gln His Ile Glu Arg Val Thr
 325 330 335
 Phe Trp Gly Val Ser Asp Ile Asp Ser Trp Lys Asn Asp Phe Pro Val
 340 345 350
 Arg Gly Arg Thr Asp Tyr Pro Leu Pro Phe Asn Arg Gln Tyr Gln Ala
 355 360 365
 Lys Pro Leu Val Gln Lys Leu Ile Asp Leu Thr Lys
 370 375 380

<210> 97
 <211> 1407

<212> DNA
<213> Unknown

<220>
<223> obtained from an environmental sample

<400> 97
 atgaatgaaa cctcgcggaa ttggttggag agaggattgc ctttcgaacg ccaacggcgt 60
 tccaacattc agcccagggt tggcgcttgc gcctaccctg ggttgggaagc aatcgctcca 120
 tcaaccctga aagggttgca gcggagggtt gcacaagacc gatacaaccc ttccaggatt 180
 ggctttctcc cttttccacc cagggttagcg cctgcggcgc aaccctgggc tgatggatca 240
 gaacgccgtt ggcgttcccg gaaacctgcg aagaaacaac tcgccttcct ggccatcacc 300
 agtctctctc cgggtctgct gtggggcgcc gaagtgaac cggcactgaa agacgtattc 360
 cgccaggact tcctgctggg ggcggcggtg aacgcggagc aggtgctgga caccaaccgg 420
 gtcgagtcgg tattgatcga aaagcatttc aacaegatca cgcccagaaa tgtgctgaag 480
 tgggaacgag tccatcctca gcccacccag tattcttttg aggacgcgga tcgctacgtc 540
 gagttcggcc gcaaacacgg aatgggtcatc atcggccaca cgctgggtctg gcacagccag 600
 acgcccggct gggctcttccg ggatgccgac ggaaagacgc tgacgcgcga agccctgctg 660
 gagcggatgc gcgaccacat ccacaccgtg gtcgggcgct acaagggcaa gatccgcggc 720
 tgggatgtgg tgaacgaggc gctgcgcgac gcaggcgctg ggcggaattc ccaatggcgg 780
 cggtatcatc gcgacgatta cattttgaaa gccttccagt atgccatga ggccgatccg 840
 gatgcggagc tctattacaa cgattattcg ctggagaagc cggccaagcg caatggcgcc 900
 gtggacctga tgaagcactg ccaggccggc ggggcgaagc tggccggcgt cggcttgacg 960
 ggccactaga acctcgactg gccggagacc gccgagatcg aaaacacccat cgcggcgttc 1020
 gcggagctgg ggctcaaggt gatgatcacg gagctggacg tcaacgcgct gccgacgccc 1080
 ggccagtcgg gcgaagccga tgtagggatg acgttcggcg gcaatttcgg cggcgataaa 1140
 tggaaatcct tcacgaacgg actgcccggc gcagtggagc aacgcctcgc ggaccgctac 1200
 gctgaaatct tcaggatctt caccgaagcac agccgtcgga ttccgcgcgt caccttctgg 1260
 ggcgtcaccg accggacctc ctggctcaac aattttccca tccgcggccg gaccaattac 1320
 ccgttgctct ttgatcgggc tggggagccc aaaccgcgct tccgatccgt cgtggcggtc 1380
 cgtcagccgc gccagcccgt cgaatga 1407

<210> 98
<211> 468
<212> PRT
<213> Unknown

<220>
<223> obtained from an environmental sample

<400> 98
 Met Asn Glu Thr Ser Arg Asn Trp Leu Glu Arg Gly Leu Pro Phe Glu
 1 5 10 15
 Arg Gln Arg Arg Ser Asn Ile Gln Pro Arg Val Gly Ala Cys Ala Tyr
 20 25 30
 Pro Gly Leu Glu Ala Ile Ala Pro Ser Thr Leu Lys Gly Leu Gln Arg
 35 40 45
 Arg Phe Ala Gln Asp Arg Tyr Asn Pro Phe Arg Ile Gly Phe Leu Pro
 50 55 60
 Phe Pro Pro Arg Val Ala Pro Ala Ala Gln Pro Trp Ala Asp Gly Ser
 65 70 75 80
 Glu Arg Arg Trp Arg Ser Arg Lys Pro Ala Lys Lys Gln Leu Ala Phe
 85 90 95
 Leu Ala Ile Thr Ser Leu Leu Ser Gly Leu Leu Trp Gly Ala Glu Val
 100 105 110
 Gln Pro Ala Leu Lys Asp Val Phe Arg Gln Asp Phe Leu Leu Gly Ala
 115 120 125
 Ala Leu Asn Ala Glu Gln Val Leu Asp Thr Asn Arg Val Glu Ser Val
 130 135 140
 Leu Ile Glu Lys His Phe Asn Thr Ile Thr Pro Glu Asn Val Leu Lys
 145 150 155 160
 Trp Glu Arg Val His Pro Gln Pro Asn Gln Tyr Ser Phe Glu Asp Ala
 165 170 175
 Asp Arg Tyr Val Glu Phe Gly Arg Lys His Gly Met Val Ile Ile Gly
 180 185 190
 His Thr Leu Val Trp His Ser Gln Thr Pro Gly Trp Val Phe Arg Asp
 195 200 205
 Ala Asp Gly Lys Thr Leu Thr Arg Glu Ala Leu Leu Glu Arg Met Arg
 210 215 220

Asp His Ile His Thr Val Val Gly Arg Tyr Lys Gly Lys Ile Arg Gly
 225 230 235 240
 Trp Asp Val Val Asn Glu Ala Leu Arg Asp Asp Gly Ala Trp Arg Asn
 245 250 255
 Ser Gln Trp Arg Arg Ile Ile Gly Asp Asp Tyr Ile Leu Lys Ala Phe
 260 265 270
 Gln Tyr Ala His Glu Ala Asp Pro Asp Ala Glu Leu Tyr Tyr Asn Asp
 275 280 285
 Tyr Ser Leu Glu Lys Pro Ala Lys Arg Asn Gly Ala Val Asp Leu Val
 290 295 300
 Lys Gln Leu Gln Ala Gly Gly Ala Lys Leu Ala Gly Val Gly Leu Gln
 305 310 315 320
 Gly His Tyr Asn Leu Asp Trp Pro Glu Thr Ala Glu Ile Glu Asn Thr
 325 330 335
 Ile Ala Ala Phe Ala Glu Leu Gly Leu Lys Val Met Ile Thr Glu Leu
 340 345 350
 Asp Val Asn Ala Leu Pro Thr Pro Gly Gln Ser Gly Glu Ala Asp Val
 355 360 365
 Gly Met Thr Phe Gly Gly Asn Phe Gly Gly Asp Lys Trp Asn Pro Phe
 370 375 380
 Thr Asn Gly Leu Pro Ala Ala Val Glu Gln Arg Leu Ala Asp Arg Tyr
 385 390 395 400
 Ala Glu Ile Phe Arg Ile Phe Thr Lys His Ser Arg Arg Ile Ser Arg
 405 410 415
 Val Thr Phe Trp Gly Val Thr Asp Arg Thr Ser Trp Leu Asn Asn Phe
 420 425 430
 Pro Ile Arg Gly Arg Thr Asn Tyr Pro Leu Leu Phe Asp Arg Ala Gly
 435 440 445
 Glu Pro Lys Pro Ala Phe Arg Ser Val Val Ala Val Arg Gln Pro Arg
 450 455 460
 Gln Pro Val Glu
 465

<210> 99
 <211> 1074
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 99
 gtgcgctcaa gagctagcgc gtactggttc ggcgtggggt tgggtggtggc gctgagcctg 60
 gctcagaccc cttcccccca gtccctgcgc gcgctggccg agcgccaggg gctgctgggtg 120
 ggagccgcgg tggacctagc ggccctgtac gaccccctcg agcccagata cgcccaactc 180
 ctgcgccgcg agttcaacct ggtggtggcc gagaacgcca tgaagtgggc ctccctgagc 240
 aacgcgcggg ggcagtacag cttcaccggc gctgacgccc tgggtgcgctt cgcccgccag 300
 cacggccagc gcttgcgcgg ccacaccctc atctggcacg agcaactgcc cgcggtgggtg 360
 cgcagcggga ctttctcccg cgaggccatg ctggcggtga tgcaggagca cattcaggcg 420
 gtggccgggg acttccgcgg ccaggtggcc tactgggacg tgggtcaacga ggcggtgagt 480
 gaccggggcg gcctgcgcga gaccccctt ctgcgggcgg tgggccccga ctacctcgag 540
 cacgccttcc gcttcgcccg cgccgccgac ccccaggcca agctcttcta caacgactac 600
 ggcgcccagc gcatgggcgc taaatcggac gagatctacg ccctgctcaa agcgctcaag 660
 gccaaagggg taccggtcga cggggtgggc ttccaggccc acctcgacag caccttctcg 720
 gtccagcagg cgcggtatgc ggagaaccta gagacgcttc gccgacctgg gcctcgaggt 780
 gcacatcacc gagctggacg tgcagctaaa aggggcgggc tcgcgggagg aacggctgga 840
 ggcgcaggcc cggatctacg ccgaggtgct ggcgacctgc cgcgcggtcc gcggctgcag 900
 cgccgtgacg ctgtggggct tcaccgacgc cactcctgg cgagccgccg ccgaaccctt 960
 gatcttcgac gcgctctacc ggccaaacc ggcgtaccag gctctgctgc gggctctggg 1020
 aggcaaccct tgagcctttt cagcccagtt ttgccaacga ggacagcact atga 1074

<210> 100
 <211> 357
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL

<222> (1)...(33)

<400> 100

Val Arg Ser Arg Ala Ser Ala Tyr Trp Phe Gly Val Gly Leu Val Val
 1 5 10 15
 Ala Leu Ser Leu Ala Gln Thr Pro Ser Pro Gln Ser Leu Arg Ala Leu
 20 25 30
 Ala Glu Arg Gln Gly Leu Leu Val Gly Ala Ala Val Asp Leu Ala Ala
 35 40 45
 Leu Tyr Asp Pro Leu Glu Pro Glu Tyr Ala Gln Leu Leu Ala Arg Glu
 50 55 60
 Phe Asn Leu Val Val Ala Glu Asn Ala Met Lys Trp Ala Ser Leu Ser
 65 70 75 80
 Asn Ala Arg Gly Gln Tyr Ser Phe Thr Gly Ala Asp Ala Leu Val Arg
 85 90 95
 Phe Ala Arg Gln His Gly Gln Arg Leu Arg Gly His Thr Leu Ile Trp
 100 105 110
 His Glu Gln Leu Pro Ala Trp Val Arg Ser Gly Thr Phe Ser Arg Glu
 115 120 125
 Ala Met Leu Ala Val Met Gln Glu His Ile Gln Ala Val Ala Gly His
 130 135 140
 Phe Arg Gly Gln Val Ala Tyr Trp Asp Val Val Asn Glu Ala Val Ser
 145 150 155 160
 Asp Arg Gly Gly Leu Arg Glu Thr Pro Phe Leu Arg Ala Val Gly Pro
 165 170 175
 Asp Tyr Leu Glu His Ala Phe Arg Phe Ala Arg Ala Ala Asp Pro Gln
 180 185 190
 Ala Lys Leu Phe Tyr Asn Asp Tyr Gly Ala Asp Gly Met Gly Ala Lys
 195 200 205
 Ser Asp Glu Ile Tyr Ala Leu Lys Ala Leu Lys Ala Lys Gly Val
 210 215 220
 Pro Val Asp Gly Val Gly Phe Gln Ala His Leu Asp Ser Thr Phe Ser
 225 230 235 240
 Val Gln Gln Ala Arg Met Arg Glu Asn Leu Glu Thr Leu Arg Arg Pro
 245 250 255
 Gly Pro Arg Gly Ala His His Arg Ala Gly Arg Ala Ala Lys Arg Gly
 260 265 270
 Gly Leu Ala Gly Gly Thr Ala Gly Gly Ala Gly Pro Asp Leu Arg Arg
 275 280 285
 Gly Ala Gly Asp Leu Pro Arg Gly Pro Arg Leu Gln Arg Arg Asp Ala
 290 295 300
 Val Gly Leu His Arg Arg Pro Leu Leu Ala Ser Arg Arg Arg Thr Pro
 305 310 315 320
 Asp Leu Arg Arg Ala Leu Pro Ala Gln Thr Gly Val Pro Gly Ser Ala
 325 330 335
 Ala Gly Ser Gly Arg Gln Pro Leu Ser Leu Phe Ser Pro Val Leu Pro
 340 345 350
 Thr Arg Thr Ala Leu
 355

<210> 101

<211> 1131

<212> DNA

<213> Unknown

<220>

<223> obtained from an environmental sample

<400> 101

atgaagtatt	ggcttacaac	cctggtttta	atgatagcgg	gaataccctt	ggcttttggg	60
tcttcagcaa	agcaagataa	atcaaagagt	ttgaaagatg	ctttcaaaaa	caaattctat	120
atcgggtgtg	cittgaaccg	gagtcaatat	ctggaacaaa	acgaacaggc	ggataaagag	180
ataaaggcac	agttcagctc	tattgtagct	gagaactgca	tgaaaagcga	aaatctggaa	240
cctaaagagg	gaaaattctt	ctttgacgat	gccgatcggt	ttgtcgcttt	tgagagaaaa	300
aatggaatgt	acatcattgg	acatacctta	atttggcatt	ctcaagtgcc	aaaatggttt	360
ttcatagata	atgaaggcaa	agttgtttcc	cgggaagttt	tgattgaacg	aatgaaaaac	420
tacatccata	cagttgtcgg	tcattataaa	ggtcgagtta	aaggttggga	tgttgtcaat	480
gaggccattc	tagatgatgg	ctcatttaga	caaagtaatt	tctttaaatt	actaggagcc	540

gattttatta	aacttgcttt	tcaatttgcc	catgaagcag	atcccaatgc	tgagctttat	600
tacaacgatt	attcgatgtc	caatccgacc	aaaagagacg	gagtggttcg	catggtgaag	660
tcattgcagc	aacaaggtgt	gagaatagac	gctatcggaa	tgacagggaca	cgtagggatg	720
gattatccca	agttggatga	gtttgaaaat	agtatcaaag	ctttttcgtc	tttaggaacc	780
aaagtgatga	ttacggaact	cgatttaagt	gtcctacca	ctcctaaagg	aaaacaaggt	840
gctaataattt	cggatgttgc	cgcttatgag	gaaaagataa	atccttaca	aaatggtctg	900
ccggctgaag	ttgaaaaggc	ttgggaagac	cggtatttgg	attttttcaa	attatttttg	960
aaatatcaac	accaaatttc	aaggggttaca	ttatgggggc	ttagtgatca	ggattcgtgg	1020
aaaaatgatt	tccagtcag	agggagaacg	gattatcctt	tgcttttcga	cagacaatac	1080
aaaccaaaaac	ctgtagtcca	gaaaattatt	aaattagcat	tgaaaaaata	a	1131

<210> 102

<211> 376

<212> PRT

<213> Unknown

<220>

<223> obtained from an environmental sample

<221> SIGNAL

<222> (1)...(23)

<400> 102

Met	Lys	Tyr	Trp	Leu	Thr	Thr	Leu	Val	Leu	Met	Ile	Ala	Gly	Ile	Pro
1				5					10					15	
Leu	Ala	Phe	Gly	Ser	Ser	Ala	Lys	Gln	Asp	Lys	Ser	Lys	Ser	Leu	Lys
			20					25					30		
Asp	Ala	Phe	Lys	Asn	Lys	Phe	Tyr	Ile	Gly	Val	Ala	Leu	Asn	Arg	Ser
		35					40					45			
Gln	Tyr	Leu	Glu	Gln	Asn	Glu	Gln	Ala	Asp	Lys	Glu	Ile	Lys	Ala	Gln
	50					55					60				
Phe	Ser	Ser	Ile	Val	Ala	Glu	Asn	Cys	Met	Lys	Ser	Glu	Asn	Leu	Glu
65					70					75				80	
Pro	Lys	Glu	Gly	Lys	Phe	Phe	Phe	Asp	Asp	Ala	Asp	Arg	Phe	Val	Ala
				85					90				95		
Phe	Gly	Glu	Lys	Asn	Gly	Met	Tyr	Ile	Gly	His	Thr	Leu	Ile	Trp	
			100					105				110			
His	Ser	Gln	Val	Pro	Lys	Trp	Phe	Phe	Ile	Asp	Asn	Glu	Gly	Lys	Val
		115					120					125			
Val	Ser	Arg	Glu	Val	Leu	Ile	Glu	Arg	Met	Lys	Asn	Tyr	Ile	His	Thr
		130				135					140				
Val	Val	Gly	His	Tyr	Lys	Gly	Arg	Val	Lys	Gly	Trp	Asp	Val	Val	Asn
145					150					155					160
Glu	Ala	Ile	Leu	Asp	Asp	Gly	Ser	Phe	Arg	Gln	Ser	Asn	Phe	Phe	Lys
				165					170					175	
Ile	Leu	Gly	Ala	Asp	Phe	Ile	Lys	Leu	Ala	Phe	Gln	Phe	Ala	His	Glu
			180					185					190		
Ala	Asp	Pro	Asn	Ala	Glu	Leu	Tyr	Tyr	Asn	Asp	Tyr	Ser	Met	Ser	Asn
		195					200					205			
Pro	Thr	Lys	Arg	Asp	Gly	Val	Val	Arg	Met	Val	Lys	Ser	Leu	Gln	Gln
		210				215					220				
Gln	Gly	Val	Arg	Ile	Asp	Ala	Ile	Gly	Met	Gln	Gly	His	Val	Gly	Met
225					230					235					240
Asp	Tyr	Pro	Lys	Leu	Asp	Glu	Phe	Glu	Asn	Ser	Ile	Lys	Ala	Phe	Ser
				245					250					255	
Ser	Leu	Gly	Thr	Lys	Val	Met	Ile	Thr	Glu	Leu	Asp	Leu	Ser	Val	Leu
			260					265					270		
Pro	Thr	Pro	Lys	Gly	Lys	Gln	Gly	Ala	Asn	Ile	Ser	Asp	Val	Ala	Ala
		275					280					285			
Tyr	Glu	Glu	Lys	Ile	Asn	Pro	Tyr	Lys	Asn	Gly	Leu	Pro	Ala	Glu	Val
		290				295					300				
Glu	Lys	Ala	Trp	Glu	Asp	Arg	Tyr	Leu	Asp	Phe	Phe	Lys	Leu	Phe	Leu
305					310					315					320
Lys	Tyr	Gln	His	Gln	Ile	Ser	Arg	Val	Thr	Leu	Trp	Gly	Leu	Ser	Asp
				325					330					335	
Gln	Asp	Ser	Trp	Lys	Asn	Asp	Phe	Pro	Val	Arg	Gly	Arg	Thr	Asp	Tyr
			340					345					350		
Pro	Leu	Leu	Phe	Asp	Arg	Gln	Tyr	Lys	Pro	Lys	Pro	Val	Val	Gln	Lys
		355					360					365			

Ile Ile Lys Leu Ala Leu Lys Lys
370 375

<210> 103
<211> 1449
<212> DNA
<213> Bacteria

<220>
<223> Obtained from an environmental sample

<400> 103
atgcgttcac attcccttcc cccgtccacc gtccgcccga aattgggccc cctcggcgcg 60
gcgctgctcg tcggcgccgt cggcgccgcc accgtgctcg tggcgcccct cacctcgac 120
gccgcccaga gcacgctcgg cgccgcggcg aagcagagcg gccggtactt cggcaccgcc 180
atcgccctcg gcaggctcaa cgactcgacg tacacgacga tcgcaaacgg cgagttcaac 240
tcggtgacgg ccgagaacga gatgaagatc gacgccaccg aaccccagca gggccgcttc 300
gacttcaccg ccggcgaccg cgtctacaac tgggcggtgc agaacggcaa gcaggtagcg 360
ggccacaccc tggcctggca ctcccagcag cccgcctgga tgcagaacct cagcggcagc 420
gcgctgcgca cggcgaatgac caaccacatc aacggcgctc tggcccacta caagggcaag 480
atcgcccgat gggacgctcg caacgaggcg ttcgcgagcg gcagttcggg agcgcgcccg 540
gactccaacc tccagcggag cggcaacgac tggatcgagg tcgccttccg caccgcccgc 600
gccgcccagc cggccgcccga gctctgtctac aacgactaca acgtcgagaa ctggacgtgg 660
gccaagaccc agggcatgta cgccatgggtc aaggacttca agcagcgcg cggtgccatc 720
gactgcgtcg gcttccagtc gcacttcaac aacgacagcc cctacaacag caacttccgc 780
accaccctcc agagttttcg cgccctcggc gtcgacgtgg ccatcaccga actcgacatc 840
cagggcgcct cgggcacgac ctacgccaac gtgaccaacg actgcctggc cgtcccgcgc 900
tgcttcggca tcacgtctg ggggtgtccg gacaccgact cctggcgagc cgagcacact 960
ccgctgctct tcaacggcga cggcagcaag aagcccgcct actcctccgt cctcaacgcc 1020
ctcaactccg tctcccccaa ccccaacccc actccgaccc cctcccccg cgccgggccc 1080
atcaagggag tcgcttcggg ccgctgcgtg gacgtacccg gagccggcac cgccgacggc 1140
acccaggtcc agctgtggga ctgcaacaac cgcaccaacc agcagtggac cctcaccgcc 1200
gccggtgagc tcagggtcta cggcgacaag tgcttgagc cgccgggac cggaacggc 1260
gccaaggtcc agatctacag ctgctggggc ggcgacaacc agaagtggcg cctcaactcc 1320
gacggttcca tcgtcgggtg ccagtcgggc ctctgcctcg acgccgtgc cggcggcacc 1380
gccaacggca cgctgatcca gctctactcc tgctggaaca gcggcaacca gcgctggacc 1440
cgcacctga 1449

<210> 104
<211> 482
<212> PRT
<213> Bacteria

<220>
<223> Obtained from an environmental sample

<221> SIGNAL
<222> (1)...(41)

<400> 104
Met Arg Ser His Ser Leu Pro Pro Ser Thr Val Arg Arg Lys Leu Gly
1 5 10 15
Gly Leu Gly Ala Ala Leu Leu Val Gly Ala Val Gly Ala Ala Thr Val
20 25 30
Leu Val Ala Pro Leu Thr Ser His Ala Ala Glu Ser Thr Leu Gly Ala
35 40 45
Ala Ala Lys Gln Ser Gly Arg Tyr Phe Gly Thr Ala Ile Ala Ser Gly
50 55 60
Arg Leu Asn Asp Ser Thr Tyr Thr Thr Ile Ala Asn Arg Glu Phe Asn
65 70 75 80
Ser Val Thr Ala Glu Asn Glu Met Lys Ile Asp Ala Thr Glu Pro Gln
85 90 95
Gln Gly Arg Phe Asp Phe Thr Ala Gly Asp Arg Val Tyr Asn Trp Ala
100 105 110
Val Gln Asn Gly Lys Gln Val Arg Gly His Thr Leu Ala Trp His Ser
115 120 125
Gln Gln Pro Ala Trp Met Gln Asn Leu Ser Gly Ser Ala Leu Arg Thr
130 135 140
Ala Met Thr Asn His Ile Asn Gly Val Met Ala His Tyr Lys Gly Lys

[illegible]

<210>	105
<211>	2793
<212>	DNA
<213>	Unknown

<220>
<223> obtained from an environmental sample

<400>	105						
atgaagttca	ctttgatgcc	gctgctgtgc	gggttcgcct	tgctgtttggg	ttgcgcggtg		60
caggcaaccc	cagccgcttc	gttacagcag	gcttatcagc	cgtattttcca	tatcgggtact		120
gccgtcagct	tggcgcaact	gcaagcatcg	aaaaaccatg	aacgagattt	aatcgccca		180
cactttaaca	gtctgacgcg	tgaaaacctg	atgaaatggg	aaaaaatcca	accgactgaa		240
ggcaactttg	attttacagc	ggccgacaag	ctcgtcgctt	ttgctgaaca	acatcggatg		300
tggctggctg	gccatacatg	cctgtggcat	gaacaaaccc	cggactgggt	atttcagggg		360
ccagatggca	aaccggccag	caagcaagtg	ttactcggca	gattaaaaaa	gcataatcaa		420
ctatgtggct	gtcgtttacca	aggtcgggta	catggctggg	atgtagtga	tgaagcgctg		480
aatgaagatg	gcagtcctgc	cgatacgccg	tggcgaaaaa	ttctgggtga	tgattacatt		540
gccaccactt	ttgcgctggt	gcatacaggt	gaccccaaa	ccaaactcta	ttacaacgac		600
tacaacctgt	ataaaccaaa	aaaacgcat	ggcgtgctac	ggatcatcca	gcaactgcag		660
caacaacaag	tgcccatcca	tgccattggc	gaacaagcgc	attatggtct	cgattcgccg		720
aaattgcagg	aagttgaaga	ctcgatcaac	gcctttgcag	ccaccggcct	cgacgtgatg		780
ctgaccgagt	tggaaatttc	gggtgtaacc	tttcgcgcct	gcatgacacc	aggcgccgat		840
atcagtcagt	atcaggaact	gcaacaacag	accgaacctt	accgcgaagg	cttaccaaaa		900
accgtcgaac	aggcctggca	acaacgttat	ctggaatctgt	tttcgctgtt	attgcgccag		960

catcaaaaat	tacaccgggt	gacgttttgg	ggtttagatg	atggccaaag	ctggcgcaat	1020
aactttccaa	tgcgcggctg	taccgattac	ccgctactgt	ttgaccgcaa	gctgcaagcc	1080
aaaccgctat	tgagcgcact	gatcaaaactg	gcagaaactc	aagcctcagc	caagccgaaa	1140
gtaaatcagc	tcggttttgc	gccaaatgcg	caaaaattgc	tggtggtgcc	ggggcggcag	1200
gcggtgtcgt	ttcagatcat	caatcaaagc	aacggcaaaa	cgggtgttgc	aggccaaagt	1260
tcggtggctc	agttttggcc	cgaatcgggc	gagtgggtca	gtatcgctga	cttttcgacc	1320
ttaaccaccc	aagggcggtta	tcaggttgaa	gcggctggat	taactccgat	caccgtcgag	1380
attactgctg	aaccttatgc	cgcgctgcat	gatgctgcca	tcaaagccta	ttattttaat	1440
cgcgctcgc	tggcgctgga	gccaaagtttt	gccgggcctt	gggcgcgcgc	tgccggtcat	1500
ccggataaca	aagtgttggg	gcacactttcc	gccgcttccg	acaagcgacc	agccgggtttt	1560
gtgatcagcg	ccgctaaagg	ctggatgac	gccggtgact	ataacaaata	cgtggtcaat	1620
tccggtatatt	ccagttacac	cctattgcaa	gcctggcagg	attttcctga	gttttatcgc	1680
gacagaacat	ggaatcttcc	ggagtccagc	aacaacctac	cagacattct	cgacgagacg	1740
ttatggaatt	tacagtggct	gagcaccatg	caggacccaa	gcgacggcgg	cgtgtatcac	1800
aagctgactg	aactgaattt	ctctgctacc	caaagtccgt	cagaagtgc	agcgccacgt	1860
tatgtggtgc	aaaaaaccac	ggcagcggca	cttaattttcg	cggcgggtgct	ggccaaagcc	1920
agtcgcattt	ttacagaatt	tgaaacgcaa	ctgcccggcc	tgtcacagca	atatcgccag	1980
caagcattag	cagcctggca	atgggcgcaa	aaaaatccac	aacaaattta	tcagcaacca	2040
gccgatgttc	acaccgggtg	ttatggcgac	aaacagctgg	ctgatgaatg	ggcttgggct	2100
ggggcgggagc	tatatattt	aaccgggtgag	cagagttacc	tgcagccggt	gttggcactt	2160
gagacgcaa	tcaccgcagc	ttcctggggcc	aatgtggcgg	cgttgggtta	ttttgcgttg	2220
gcattccgctg	aacagtttga	gcctgcactt	cgaaaaaaag	tgcagcaaaa	aatccaacaa	2280
gcccgcggcgc	aaattgtagc	cgagcatcaa	gcgtccgcct	accaggtggc	gatgactcaa	2340
aaagattttg	tctggggcag	taatgcgggtg	gcgatgaaca	aaggcatggt	gttatatcaa	2400
gcgtggaaaa	ttgaccacac	accagagctg	cgacaggcga	tgcaagggct	gctggattac	2460
gtcctcggtc	gcaaccgcgt	gcagctgtct	tatgtcacag	gttttgggtg	gcaaagcccg	2520
caacatatcc	atcaccgccc	ctcggcggca	gatcagatca	aagcaccagt	gccgggctgg	2580
ttagtgggtg	gtgcacagcc	gggtaagcaa	gataaatgct	cttattccgg	tatttttgct	2640
accggcactt	taccgcgtgc	cagcacttta	cctgcaacga	cttatctcga	ccactggtgc	2700
agctacgcca	ccaatgaagt	ggcgattaac	tggaatgcac	ctttagtgtg	cgtgctggcc	2760
tggagccttt	caccagactc	catgacccaa	tga			2793

<210> 106

<211> 930

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample

<221> SIGNAL

<222> (1)...(22)

<400> 106

Met	Lys	Phe	Thr	Leu	Met	Pro	Leu	Leu	Cys	Gly	Phe	Ala	Leu	Leu	Leu
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Gly	Cys	Ala	Val	Gln	Ala	Thr	Pro	Ala	Ala	Ser	Leu	Gln	Gln	Ala	Tyr
			20				25					30			
Gln	Pro	Tyr	Phe	His	Ile	Gly	Thr	Ala	Val	Ser	Leu	Ala	Gln	Leu	Gln
		35				40					45				
Ala	Ser	Lys	Asn	His	Glu	Arg	Asp	Leu	Ile	Ala	Gln	His	Phe	Asn	Ser
		50			55					60					
Leu	Thr	Ala	Glu	Asn	Leu	Met	Lys	Trp	Glu	Lys	Ile	Gln	Pro	Thr	Glu
65				70					75					80	
Gly	Asn	Phe	Asp	Phe	Thr	Ala	Ala	Asp	Lys	Leu	Val	Ala	Phe	Ala	Glu
			85					90					95		
Gln	His	Arg	Met	Trp	Leu	Val	Gly	His	Thr	Ile	Leu	Trp	His	Glu	Gln
		100					105					110			
Thr	Pro	Asp	Trp	Val	Phe	Gln	Gly	Pro	Asp	Gly	Lys	Pro	Ala	Ser	Lys
		115				120					125				
Gln	Val	Leu	Leu	Gly	Arg	Leu	Lys	Lys	His	Ile	Gln	Thr	Val	Val	Gly
	130				135					140					
Arg	Tyr	Gln	Gly	Arg	Val	His	Gly	Trp	Asp	Val	Asn	Glu	Ala	Leu	
145				150				155						160	
Asn	Glu	Asp	Gly	Ser	Leu	Arg	Asp	Thr	Pro	Trp	Arg	Lys	Ile	Leu	Gly
		165						170					175		
Asp	Asp	Tyr	Ile	Ala	Thr	Thr	Phe	Ala	Leu	Val	His	Gln	Val	Asp	Pro
		180				185						190			
Lys	Ala	Lys	Leu	Tyr	Tyr	Asn	Asp	Tyr	Asn	Leu	Tyr	Lys	Pro	Lys	Lys

Arg	Thr	Gly	Val	Leu	Arg	Ile	Ile	Gln	Gln	Leu	Gln	Gln	Gln	Val
210	210	210	210	210	210	215	200	200	200	200	205	205	205	205
Pro	Ile	His	Ala	Ile	Gly	Glu	Gln	Ala	His	Tyr	Gly	Leu	Asp	Ser
225	225	225	225	225	230	230	230	230	235	235	220	220	220	240
Lys	Leu	Gln	Glu	Val	Glu	Asp	Ser	Ile	Asn	Ala	Phe	Ala	Ala	Thr
				245					250					255
Leu	Asp	Val	Met	Leu	Thr	Glu	Leu	Glu	Ile	Ser	Val	Leu	Pro	Phe
			260					265					270	Pro
Pro	Gly	Met	Thr	Pro	Gly	Ala	Asp	Ile	Ser	Gln	His	Gln	Glu	Leu
		275					280					285		Gln
Gln	Gln	Leu	Asn	Pro	Tyr	Arg	Glu	Gly	Leu	Pro	Lys	Thr	Val	Glu
		290				295					300			Gln
Ala	Trp	Gln	Gln	Arg	Tyr	Leu	Asp	Leu	Phe	Ser	Leu	Leu	Leu	Arg
305					310					315				320
His	Gln	Lys	Leu	His	Arg	Val	Thr	Phe	Trp	Gly	Leu	Asp	Asp	Gly
				325					330					335
Ser	Trp	Arg	Asn	Phe	Pro	Met	Arg	Gly	Arg	Thr	Asp	Tyr	Pro	Leu
			340				345					350		
Leu	Phe	Asp	Arg	Lys	Leu	Gln	Ala	Lys	Pro	Leu	Leu	Ser	Ala	Leu
		355					360					365		Ile
Lys	Leu	Ala	Glu	Thr	Gln	Ala	Ser	Ala	Lys	Pro	Lys	Val	Asn	Gln
		370				375					380			Leu
Gly	Phe	Ala	Pro	Asn	Ala	Gln	Lys	Leu	Leu	Val	Val	Pro	Gly	Arg
385					390					395				Gln
Ala	Val	Ser	Phe	Gln	Ile	Ile	Asn	Gln	Ser	Asn	Gly	Lys	Thr	Val
				405					410					415
Gln	Gly	Gln	Ser	Val	Ala	Gln	Phe	Trp	Pro	Glu	Ser	Gly	Glu	Trp
			420				425					430		
Val	Ser	Ile	Ala	Asp	Phe	Ser	Thr	Leu	Thr	Thr	Gln	Gly	Arg	Tyr
		435					440					445		Gln
Val	Glu	Ala	Ala	Gly	Leu	Thr	Pro	Ile	Thr	Val	Glu	Ile	Thr	Ala
		450				455					460			Glu
Pro	Tyr	Ala	Ala	Leu	His	Asp	Ala	Ser	Ile	Lys	Ala	Tyr	Tyr	Phe
465					470					475				Asn
Arg	Ala	Ser	Leu	Ala	Leu	Glu	Pro	Ser	Phe	Ala	Gly	Pro	Trp	Ala
				485					490					Arg
Ala	Ala	Gly	His	Pro	Asp	Asn	Lys	Val	Leu	Val	His	Thr	Ser	Ala
			500					505					510	Ala
Ser	Asp	Lys	Arg	Pro	Ala	Gly	Phe	Val	Ile	Ser	Ala	Ala	Lys	Gly
		515					520					525		Trp
Tyr	Asp	Ala	Gly	Asp	Tyr	Asn	Lys	Tyr	Val	Val	Asn	Ser	Gly	Ile
		530				535					540			Ser
Ser	Tyr	Thr	Leu	Leu	Gln	Ala	Trp	Gln	Asp	Phe	Pro	Glu	Phe	Tyr
545					550					555				Arg
Asp	Arg	Thr	Trp	Asn	Leu	Pro	Glu	Ser	Ser	Asn	Asn	Leu	Pro	Asp
				565					570					Ile
Leu	Asp	Glu	Thr	Leu	Trp	Asn	Leu	Gln	Trp	Leu	Ser	Thr	Met	Gln
			580					585					590	Asp
Pro	Ser	Asp	Gly	Gly	Val	Tyr	His	Lys	Leu	Thr	Glu	Leu	Asn	Phe
		595					600					605		Ser
Ala	Thr	Gln	Met	Pro	Ser	Glu	Val	Thr	Ala	Pro	Arg	Tyr	Val	Val
		610				615					620			Gln
Lys	Thr	Thr	Ala	Ala	Ala	Leu	Asn	Phe	Ala	Ala	Val	Leu	Ala	Lys
625					630				635					Ala
Ser	Arg	Ile	Phe	Thr	Glu	Phe	Glu	Thr	Gln	Leu	Pro	Gly	Leu	Ser
				645					650					Gln
Gln	Tyr	Arg	Gln	Ala	Leu	Ala	Ala	Trp	Gln	Trp	Ala	Gln	Lys	Asn
			660				665					670		
Pro	Gln	Gln	Ile	Tyr	Gln	Gln	Pro	Ala	Asp	Val	His	Thr	Gly	Ala
		675					680					685		Tyr
Gly	Asp	Lys	Gln	Leu	Ala	Asp	Glu	Trp	Ala	Trp	Ala	Gly	Ala	Glu
		690				695					700			Leu
Tyr	Leu	Leu	Thr	Gly	Glu	Gln	Ser	Tyr	Leu	Gln	Pro	Leu	Leu	Ala
705					710					715				Leu
Glu	Thr	Pro	Ile	Thr	Ala	Ala	Ser	Trp	Ala	Asn	Val	Ala	Ala	Leu
				725					730					Gly
Tyr	Phe	Ala	Leu	Ala	Ser	Ala	Glu	Gln	Phe	Glu	Pro	Ala	Leu	Arg
			740					745					750	Lys

Lys Val Gln Gln Lys Ile Gln Gln Ala Ala Ala Gln Ile Val Ala Glu
 755 760 765
 His Gln Ala Ser Ala Tyr Gln Val Ala Met Thr Gln Lys Asp Phe Val
 770 775 780
 Trp Gly Ser Asn Ala Val Ala Met Asn Lys Gly Met Leu Leu Tyr Gln
 785 790 795
 Ala Trp Lys Ile Asp Pro Gln Pro Glu Leu Arg Gln Ala Met Gln Gly
 805 810 815
 Leu Leu Asp Tyr Val Leu Gly Arg Asn Pro Leu Gln Leu Ser Tyr Val
 820 825 830
 Thr Gly Phe Gly Ala Gln Ser Pro Gln His Ile His His Arg Pro Ser
 835 840 845
 Ala Ala Asp Gln Ile Lys Ala Pro Val Pro Gly Trp Leu Val Gly Gly
 850 855 860
 Ala Gln Pro Gly Lys Gln Asp Lys Cys Ser Tyr Ser Gly Ile Phe Ala
 865 870 875
 Thr Gly Thr Leu Pro Ala Ala Ser Thr Leu Pro Ala Thr Thr Tyr Leu
 885 890 895
 Asp His Trp Cys Ser Tyr Ala Thr Asn Glu Val Ala Ile Asn Trp Asn
 900 905 910
 Ala Pro Leu Val Tyr Val Leu Ala Trp Ser Leu Ser Pro Asp Ser Met
 915 920 925
 Thr Lys
 930

<210> 107
 <211> 1725
 <212> DNA
 <213> Bacteria

<400> 107
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 gatggaaca ctccggttcc gacacccagt ccaaagccgg ctaacacacg tattgaagcg 120
 gaagattatg acggtattaa ttcttcaagt attgagataa taggtgttcc acctgaagga 180
 ggcagaggaa taggttatat taccagtggg gattatctgg tatacaagag tatagacttt 240
 ggaaacggag caacgtcgtt taaggccaag gttgcaaatg caaatacttc caatattgaa 300
 cttagattaa acggtccgaa tggactctc ataggcacac tctcggtaaa atccacagga 360
 gattggaata catatgagga gcaaaacttg agcattagca aagtcaccgg aataaatgat 420
 ttgtacttgg tattcaaagg ccctgtaaac atagactggg tcacttttgg cgttgaaagc 480
 agttccacag gtctggggga tttaaatggg gacggaaaata ttaactcgtc ggaccttcag 540
 gcgttaaaga ggcatttggc cggatatatca ccgcttacgg gagaggctct tttgaagagc 600
 gatgtaata ggagcggcaa agtggattct actgactatt cagtgtgtaa aagatatata 660
 tccgcatta ttacagagtt ccccggaaca ggtgatgtac agacaccaa tccgtctgtt 720
 actccgacac aaactcctat cccacagatt tcgggaaatg ctcttaggga ttatgcggag 780
 gcaaggggaa taaaaatcgg aacatgtgtc aactatccgt tttacaacaa ttcagatcca 840
 acctacaaca gcatttttgc aagagaattt tcaatgggtg tatgtgaaaa tgaaatgaag 900
 tttgatgctt tgcagccgag acaaaacgtt tttgattttt cgaaaggaga ccagttgctt 960
 gcttttgcag aaagaaacgg tatgcagatg aggggacata cgttgatftg gcacaatcaa 1020
 aacccgtcat ggcttacaaa cggtaactgg aaccgggatt cgctgcttgc ggtaatgaaa 1080
 aatcacatta ccactgttat gacccattac aaaggtaaaa ttgttgagtg ggatgtggca 1140
 aacgaatgta tggatgattc cggcaacggc ttaagaagca gcatatggag aaatgtaatc 1200
 ggtcaggact accttgacta tgctttcagg tatgcaagag aagcagatcc cgatgcactt 1260
 cttttctaca atgattataa tattgaagac ttgggtccaa agtccaatgc ggtatttaac 1320
 atgattaaaa gtatgaagga aagaggtgtg ccgattgacg gagtaggatt ccaatgccac 1380
 tttatcaatg gaatgagccc cgagtacctt gccagcattg atcaaaatat taagagatat 1440
 gcggaatatg gcgttatagt atcctttacc gaaatagata tacgcatacc tcagtcggaa 1500
 aacccggcaa ctgcattcca ggtacaggca aacaactata aggaacttat gaaaatttgt 1560
 ctggcaaacc ccaattgcaa tacctttgtg atgtggggat tcacagataa atacacatgg 1620
 attccgggaa ctttcccagg atatggcaat ccattgattt atgacagcaa ttacaatccg 1680
 aaaccggcat acaatgcaat aaaggaagct cttatgggct attga 1725

<210> 108
 <211> 574
 <212> PRT
 <213> Bacteria

<400> 108
 Val Trp Lys Pro Gly Leu Trp Asn Phe Leu Gln Met Ala Asp Glu Ala
 1 5 10 15

Gly Leu Thr Arg Asp Gly Asn Thr Pro Val Pro Thr Pro Ser Pro Lys
 20 25 30
 Pro Ala Asn Thr Arg Ile Glu Ala Glu Asp Tyr Asp Gly Ile Asn Ser
 35 40 45
 Ser Ser Ile Glu Ile Ile Gly Val Pro Pro Glu Gly Arg Gly Ile
 50 55 60
 Gly Tyr Ile Thr Ser Gly Asp Tyr Leu Val Tyr Lys Ser Ile Asp Phe
 65 70 75 80
 Gly Asn Gly Ala Thr Ser Phe Lys Ala Lys Val Ala Asn Ala Asn Thr
 85 90 95
 Ser Asn Ile Glu Leu Arg Leu Asn Gly Pro Asn Gly Thr Leu Ile Gly
 100 105 110
 Thr Leu Ser Val Lys Ser Thr Gly Asp Trp Asn Thr Tyr Glu Glu Gln
 115 120 125
 Thr Cys Ser Ile Ser Lys Val Thr Gly Ile Asn Asp Leu Tyr Leu Val
 130 135 140
 Phe Lys Gly Pro Val Asn Ile Asp Trp Phe Thr Phe Gly Val Glu Ser
 145 150 155 160
 Ser Ser Thr Gly Leu Gly Asp Leu Asn Gly Asp Gly Asn Ile Asn Ser
 165 170 175
 Ser Asp Leu Gln Ala Leu Lys Arg His Leu Leu Gly Ile Ser Pro Leu
 180 185 190
 Thr Gly Glu Ala Leu Leu Arg Ala Asp Val Asn Arg Ser Gly Lys Val
 195 200 205
 Asp Ser Thr Asp Tyr Ser Val Leu Lys Arg Tyr Ile Leu Arg Ile Ile
 210 215 220
 Thr Glu Phe Pro Gly Gln Gly Asp Val Gln Thr Pro Asn Pro Ser Val
 225 230 235 240
 Thr Pro Thr Gln Thr Pro Ile Pro Thr Ile Ser Gly Asn Ala Leu Arg
 245 250 255
 Asp Tyr Ala Glu Ala Arg Gly Ile Lys Ile Gly Thr Cys Val Asn Tyr
 260 265 270
 Pro Phe Tyr Asn Asn Ser Asp Pro Thr Tyr Asn Ser Ile Leu Gln Arg
 275 280 285
 Glu Phe Ser Met Val Val Cys Glu Asn Glu Met Lys Phe Asp Ala Leu
 290 295 300
 Gln Pro Arg Gln Asn Val Phe Asp Phe Ser Lys Gly Asp Gln Leu Leu
 305 310 315 320
 Ala Phe Ala Glu Arg Asn Gly Met Gln Met Arg Gly His Thr Leu Ile
 325 330 335
 Trp His Asn Gln Asn Pro Ser Trp Leu Thr Asn Gly Asn Trp Asn Arg
 340 345 350
 Asp Ser Leu Leu Ala Val Met Lys Asn His Ile Thr Thr Val Met Thr
 355 360 365
 His Tyr Lys Gly Lys Ile Val Glu Trp Asp Val Ala Asn Glu Cys Met
 370 375 380
 Asp Asp Ser Gly Asn Gly Leu Arg Ser Ser Ile Trp Arg Asn Val Ile
 385 390 395 400
 Gly Gln Asp Tyr Leu Asp Tyr Ala Phe Arg Tyr Ala Arg Glu Ala Asp
 405 410 415
 Pro Asp Ala Leu Leu Phe Tyr Asn Asp Tyr Asn Ile Glu Asp Leu Gly
 420 425 430
 Pro Lys Ser Asn Ala Val Phe Asn Met Ile Lys Ser Met Lys Glu Arg
 435 440 445
 Gly Val Pro Ile Asp Gly Val Gly Phe Gln Cys His Phe Ile Asn Gly
 450 455 460
 Met Ser Pro Glu Tyr Leu Ala Ser Ile Asp Gln Asn Ile Lys Arg Tyr
 465 470 475 480
 Ala Glu Ile Gly Val Ile Val Ser Phe Thr Glu Ile Asp Ile Arg Ile
 485 490 495
 Pro Gln Ser Glu Asn Pro Ala Thr Ala Phe Gln Val Gln Ala Asn Asn
 500 505 510
 Tyr Lys Glu Leu Met Lys Ile Cys Leu Ala Asn Pro Asn Cys Asn Thr
 515 520 525
 Phe Val Met Trp Gly Phe Thr Asp Lys Tyr Thr Trp Ile Pro Gly Thr
 530 535 540
 Phe Pro Gly Tyr Gly Asn Pro Leu Ile Tyr Asp Ser Asn Tyr Asn Pro
 545 550 555 560
 Lys Pro Ala Tyr Asn Ala Ile Lys Glu Ala Leu Met Gly Tyr

565

570

<210> 109
 <211> 1242
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 109
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 gcaggggag ctggtgccga aactaatatt tcaaagaagc caaatataag tggattaacc 120
 ggcggcgaat tagaccaaag atataaagat tctttcacca ttggtgctgc ggttgagccg 180
 tatcaattat tagatgcaaa agattcacaa atgctaaagc ggcatittta tagtatcgta 240
 gcagagaatg tcatgaagcc tagtagttta cagccagtag aaggacaatt caattgggag 300
 ccggccgata aacttggtca gtttgcaag gaaaatggaa tggacatgcg cggacatacg 360
 cttgtctggc atagccaggt accggattgg ttctttgaag atgcggcagg aaatccaatg 420
 gttgtttggg aaaatggcag gcaagtgggt gccgatccag caaatcttca ggaaaacaaa 480
 gagctcttac ttagccgatt acaaaatcat attcaggcag tcgtaacgcg ttataaagat 540
 gatataaaat cttgggatgt tgtaaatgaa gtaatcgatg aatggggcgg acattctgaa 600
 gggctgcgtc aatctccatg gttcctcatc accggaacgg actatattaa agttgctttt 660
 gaaactgcaa gagaatatgc agctccagac gctaagctgt atatcaatga ttacaataga 720
 gaagtagaac caaaaaggac gcacctttat aacttagtaa aaagttttaa agaagaacaa 780
 aacgttccaa ttgatgggtg tgggcatcag tctcacattc aaattggctg gccttcagaa 840
 aaagaaattg aagataccat taatatgttt gcagatcttg gtttagataa ccaaatcacc 900
 gagcttgatg ttagtatgta tggctggcca gtaaggctcg atccaactta tgatgcgatc 960
 ccagaactta aattcatgga tcaagcagct cgttatgatc gtttatttaa gttatatgag 1020
 aaattaggag ataaaatcag taatgtgaca ttctggggta ttgaggataa ccatacatgg 1080
 ctgaatgacc gtgcagatgt ttactatgat gaaaatggaa atgttgattt agatagagaa 1140
 acaccaagag tagaaagagg agcaggaaaa gatgcgccat ttgtatttga tctgaatac 1200
 aatgtaaaac cagcttattg ggcaattatc gaccacaaat aa 1242

<210> 110
 <211> 413
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(26)

<400> 110
 Met Leu Lys Val Leu Arg Lys Pro Ile Ile Ser Gly Leu Ala Leu Ala
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 Leu Leu Leu Pro Ala Gly Ala Ala Gly Ala Glu Thr Asn Ile Ser Lys
 20 25 30
 Lys Pro Asn Ile Ser Gly Leu Thr Ala Pro Gln Leu Asp Gln Arg Tyr
 35 40 45
 Lys Asp Ser Phe Thr Ile Gly Ala Ala Val Glu Pro Tyr Gln Leu Leu
 50 55 60
 Asp Ala Lys Asp Ser Gln Met Leu Lys Arg His Phe Asn Ser Ile Val
 65 70 75 80
 Ala Glu Asn Val Met Lys Pro Ser Ser Leu Gln Pro Val Glu Gly Gln
 85 90 95
 Phe Asn Trp Glu Pro Ala Asp Lys Leu Val Gln Phe Ala Lys Glu Asn
 100 105 110
 Gly Met Asp Met Arg Gly His Thr Leu Val Trp His Ser Gln Val Pro
 115 120 125
 Asp Trp Phe Phe Glu Asp Ala Ala Gly Asn Pro Met Val Val Trp Glu
 130 135 140
 Asn Gly Arg Gln Val Val Ala Asp Pro Ala Asn Leu Gln Glu Asn Lys
 145 150 155 160
 Glu Leu Leu Leu Ser Arg Leu Gln Asn His Ile Gln Ala Val Val Thr
 165 170 175
 Arg Tyr Lys Asp Ile Lys Ser Trp Asp Val Val Asn Glu Val Ile
 180 185 190

Asp Glu Trp Gly Gly His Ser Glu Gly Leu Arg Gln Ser Pro Trp Phe
 195 200 205
 Leu Ile Thr Gly Thr Asp Tyr Ile Lys Val Ala Phe Glu Thr Ala Arg
 210 215 220
 Glu Tyr Ala Ala Pro Asp Ala Lys Leu Tyr Ile Asn Asp Tyr Asn Thr
 225 230 235 240
 Glu Val Glu Pro Lys Arg Thr His Leu Tyr Asn Leu Val Lys Ser Leu
 245 250 255
 Lys Glu Glu Gln Asn Val Pro Ile Asp Gly Val Gly His Gln Ser His
 260 265 270
 Ile Gln Ile Gly Trp Pro Ser Glu Lys Glu Ile Glu Asp Thr Ile Asn
 275 280 285
 Met Phe Ala Asp Leu Gly Leu Asp Asn Gln Ile Thr Glu Leu Asp Val
 290 295 300
 Ser Met Tyr Gly Trp Pro Val Arg Ser Tyr Pro Thr Tyr Asp Ala Ile
 305 310 315 320
 Pro Glu Leu Lys Phe Met Asp Gln Ala Ala Arg Tyr Asp Arg Leu Phe
 325 330 335
 Lys Leu Tyr Glu Lys Leu Gly Asp Lys Ile Ser Asn Val Thr Phe Trp
 340 345 350
 Gly Ile Ala Asp Asn His Thr Trp Leu Asn Asp Arg Ala Asp Val Tyr
 355 360 365
 Tyr Asp Glu Asn Gly Asn Val Leu Asp Arg Glu Thr Pro Arg Val
 370 375 380
 Glu Arg Gly Ala Gly Lys Asp Ala Pro Phe Val Phe Asp Pro Glu Tyr
 385 390 395 400
 Asn Val Lys Pro Ala Tyr Trp Ala Ile Ile Asp His Lys
 405 410

<210> 111
 <211> 1089
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 111
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 aagtccctca ttggagccgt gctgggttat gacgcactcc agggaaagga tccggcgagt 120
 gtggaaattg cgaccacgca cttcgatgct ctactgcgg aaaacagcat gaagcccgt 180
 ctggtgcaac ctaaagaggg cgaatttgac ttcgctgatg gagaccggct tcttgacatc 240
 acacagcagt gcggtgcgac tgcgattggc cacactttgc tctggcacca acagacaccg 300
 aaatggtttt tcgagggggc agatgaccag cctactaacc gcgagttggc cctggcacgc 360
 atgagaaagc acatcgccac tcttgttggc cggtacaaag gtcgcattaa gcaatgggat 420
 gtggtgaatg aggcgattag cgatgcagag ggcgagtact tgagaccaa tagtccatgg 480
 ttcaaggctg ttggagaaga tcacattgag caggctttcc gggcagcgca cgaagccgat 540
 cctgacgcca tcctcatcta taacgattac aacatcgagc aggagtacaa gcgtcccaaa 600
 gcgatacgac tgctgaggtc attacttgag caggacgttc cccttcattg cgtgggcatc 660
 cagggccact ggcgtatgga cactctgaat gttgccgaaa tcgaagaagc tatcaaagaa 720
 tttgctgctg tgggtctcaa ggcatgatc accgagcttg acatcagcgt gctaccgaca 780
 aagtatcagg gagccgatct ctctaccgc gaagaattga cgcctgaaat caatccctat 840
 acggagggac taccgagaa cgttgcccgg caacatgccg aatgttaccg ccaagtcttc 900
 aaaatgttcc tgtgccacaa ggatgccatt ggccgtgtca cgctctgggg cgttcattgat 960
 ggcagatcat ggttcaatga ctttcccgtc agagggcgca ccgattatcc tctgcttttc 1020
 gaccggcagg gcaaaccacaa gccagcattt tttgccgtct tgaaggctgc gcaagatcag 1080
 ccacaatga 1089

<210> 112
 <211> 362
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 112
 Met Leu Thr Thr Pro Thr Thr Gln Asp His Val Pro Val Leu Lys Asp
 1 5 10 15

Ala Phe Lys Gly Lys Phe Leu Ile Gly Ala Val Leu Gly Tyr Asp Ala
 20 25 30
 Leu Gln Gly Lys Asp Pro Ala Ser Val Glu Ile Ala Thr Thr His Phe
 35 40 45
 Asp Ala Leu Thr Ala Glu Asn Ser Met Lys Pro Ala Leu Val Gln Pro
 50 55 60
 Lys Glu Gly Glu Phe Asp Phe Ala Asp Gly Asp Arg Leu Leu Asp Ile
 65 70 75 80
 Thr Gln Gln Cys Gly Ala Thr Ala Ile Gly His Thr Leu Leu Trp His
 85 90 95
 Gln Gln Thr Pro Lys Trp Phe Phe Glu Gly Pro Asp Asp Gln Pro Thr
 100 105 110
 Asn Arg Glu Leu Ala Leu Ala Arg Met Arg Lys His Ile Ala Thr Leu
 115 120 125
 Val Gly Arg Tyr Lys Gly Arg Ile Lys Gln Trp Asp Val Val Asn Glu
 130 135 140
 Ala Ile Ser Asp Ala Glu Gly Glu Tyr Leu Arg Pro Asn Ser Pro Trp
 145 150 155 160
 Phe Lys Ala Val Gly Glu Asp His Ile Ala Gln Ala Phe Arg Ala Ala
 165 170 175
 His Glu Ala Asp Pro Asp Ala Ile Leu Ile Tyr Asn Asp Tyr Asn Ile
 180 185 190
 Glu Gln Glu Tyr Lys Arg Pro Lys Ala Ile Arg Leu Leu Arg Ser Leu
 195 200 205
 Leu Glu Gln Asp Val Pro Leu His Ala Val Gly Ile Gln Gly His Trp
 210 215 220
 Arg Met Asp Thr Leu Asn Val Ala Glu Ile Glu Glu Ala Ile Lys Glu
 225 230 235 240
 Phe Ala Ala Leu Gly Leu Lys Val Met Ile Thr Glu Leu Asp Ile Ser
 245 250 255
 Val Leu Pro Thr Lys Tyr Gln Gly Ala Asp Leu Ser Thr Arg Glu Glu
 260 265 270
 Leu Thr Pro Glu Ile Asn Pro Tyr Thr Glu Gly Leu Pro Glu Asn Val
 275 280 285
 Ala Arg Gln His Ala Glu Cys Tyr Arg Gln Val Phe Lys Met Phe Leu
 290 295 300
 Cys His Lys Asp Ala Ile Gly Arg Val Thr Leu Trp Gly Val His Asp
 305 310 315 320
 Gly Arg Ser Trp Phe Asn Asp Phe Pro Val Arg Gly Arg Thr Asp Tyr
 325 330 335
 Pro Leu Leu Phe Asp Arg Gln Gly Lys Pro Lys Pro Ala Phe Phe Ala
 340 345 350
 Val Leu Lys Ala Ala Gln Asp Gln Pro Gln
 355 360

<210> 113

<211> 1155

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample

<400> 113

atgttaaaag	tattgcgtaa	accacttttt	tctggattag	cttttagcgat	agtattacct	60
accggattat	ccagtgctta	tgcagctgaa	aatcaaccag	ttagtgcatt	agatgcagcg	120
gttgaacttg	atgaaagata	tgcagaatca	ttcgatattg	gtgcagccgt	tgagccttct	180
atgcttcaag	gaaaagatgc	tgaagtatta	aagcgtcatt	ataacagcat	tgtggccgaa	240
aatgtaatga	aaccgattaa	tatacagcct	gaagaaggaa	agttcacttt	taaaagaaatg	300
gataaaatcg	ttaagtttgc	gaaagaaaat	aatatgaagc	ttcgtggcca	tacccttatt	360
tggcacagtc	aagtaccgga	gtggttcttc	cttgataaag	aaggaaataa	gatggtggat	420
gaaacggatc	caaagcagcg	cgaaaaaaat	aaaaggcttt	tacttaagcg	tttagaaaacg	480
catattaaaa	cgatcgctcaa	gcgctataaa	aatgatatta	gctcctggga	cgtggtcaac	540
gaggtagtgg	atgataacgg	gaaattacgt	aattcaccct	ggatatcaaat	cacaggtact	600
gattatatca	aggttgcttt	tgaaacagcg	gaccgttatg	caggggaagaa	cgctaagctt	660
tatatcaatg	actacaacac	ggaaatagac	cctaaaagag	aaaccctcta	taatcttgtc	720
aaggaattag	tgaaggaggg	agtcccagtt	gatggagtgg	gacatcaagc	tcatatccaa	780
atcggctggc	caactatagc	ggaaatcgag	aaaaccatta	atatgtttgc	agaccttggc	840
ctagacaatc	aaattacaga	actagatggt	agcctttatg	ggtggccgcc	aaagcctgct	900

taccaactt	atgacgaaat	cccggaagt	gaattcgaac	gtcaagctgt	tcgttacgat	960
caactattttg	atttatacga	gagattggga	gataaaatta	gcagtgtgac	attctggggc	1020
gttgctgaca	accatacatg	gttaaatac	cgtgcagaac	aatataatga	cgggtaggc	1080
gtggacgcac	catttgtttt	cgataaggat	tataatgtaa	aaccagctta	ttgggctatt	1140
atcgatcgcg	attaa					1155

<210> 114

<211> 384

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample

<221> SIGNAL

<222> (1)...(28)

<400> 114

Met	Leu	Lys	Val	Leu	Arg	Lys	Pro	Leu	Phe	Ser	Gly	Leu	Ala	Leu	Ala
1				5					10					15	
Ile	Val	Leu	Pro	Thr	Gly	Leu	Ser	Ser	Ala	Tyr	Ala	Ala	Glu	Asn	Gln
			20					25					30		
Pro	Val	Ser	Ala	Leu	Asp	Ala	Ala	Val	Glu	Leu	Asp	Glu	Arg	Tyr	Ala
		35				40						45			
Glu	Ser	Phe	Asp	Ile	Gly	Ala	Ala	Val	Glu	Pro	Ser	Met	Leu	Gln	Gly
	50				55						60				
Lys	Asp	Ala	Glu	Val	Leu	Lys	Arg	His	Tyr	Asn	Ser	Ile	Val	Ala	Glu
65				70						75				80	
Asn	Val	Met	Lys	Pro	Ile	Asn	Ile	Gln	Pro	Glu	Glu	Gly	Lys	Phe	Thr
			85					90					95		
Phe	Lys	Glu	Met	Asp	Lys	Ile	Val	Lys	Phe	Ala	Lys	Glu	Asn	Asn	Met
			100					105					110		
Lys	Leu	Arg	Gly	His	Thr	Leu	Ile	Trp	His	Ser	Gln	Val	Pro	Glu	Trp
		115				120						125			
Phe	Phe	Leu	Asp	Lys	Glu	Gly	Asn	Lys	Met	Val	Asp	Glu	Thr	Asp	Pro
	130					135					140				
Lys	Gln	Arg	Glu	Lys	Asn	Lys	Arg	Leu	Leu	Leu	Lys	Arg	Leu	Glu	Thr
145				150					155					160	
His	Ile	Lys	Thr	Ile	Val	Lys	Arg	Tyr	Lys	Asn	Asp	Ile	Ser	Ser	Trp
			165					170					175		
Asp	Val	Val	Asn	Glu	Val	Val	Asp	Asp	Asn	Gly	Lys	Leu	Arg	Asn	Ser
			180					185					190		
Pro	Trp	Tyr	Gln	Ile	Thr	Gly	Thr	Asp	Tyr	Ile	Lys	Val	Ala	Phe	Glu
		195				200						205			
Thr	Ala	Asp	Arg	Tyr	Ala	Gly	Lys	Asn	Ala	Lys	Leu	Tyr	Ile	Asn	Asp
	210					215					220				
Tyr	Asn	Thr	Glu	Ile	Asp	Pro	Lys	Arg	Glu	Thr	Leu	Tyr	Asn	Leu	Val
225				230					235					240	
Lys	Glu	Leu	Val	Lys	Glu	Gly	Val	Pro	Val	Asp	Gly	Val	Gly	His	Gln
			245					250					255		
Ala	His	Ile	Gln	Ile	Gly	Trp	Pro	Thr	Ile	Ala	Glu	Ile	Glu	Lys	Thr
		260						265					270		
Ile	Asn	Met	Phe	Ala	Asp	Leu	Gly	Leu	Asp	Asn	Gln	Ile	Thr	Glu	Leu
		275					280				285				
Asp	Val	Ser	Leu	Tyr	Gly	Trp	Pro	Pro	Lys	Pro	Ala	Tyr	Pro	Thr	Tyr
	290					295					300				
Asp	Glu	Ile	Pro	Ala	Ser	Glu	Phe	Glu	Arg	Gln	Ala	Val	Arg	Tyr	Asp
305				310					315					320	
Gln	Leu	Phe	Asp	Leu	Tyr	Glu	Arg	Leu	Gly	Asp	Lys	Ile	Ser	Ser	Val
			325					330					335		
Thr	Phe	Trp	Gly	Val	Ala	Asp	Asn	His	Thr	Trp	Leu	Asn	Asp	Arg	Ala
		340					345						350		
Glu	Gln	Tyr	Asn	Asp	Gly	Val	Gly	Val	Asp	Ala	Pro	Phe	Val	Phe	Asp
	355					360					365				
Lys	Asp	Tyr	Asn	Val	Lys	Pro	Ala	Tyr	Trp	Ala	Ile	Ile	Asp	Arg	Asp
	370					375					380				

<210> 115

<211> 1362

<212> DNA
<213> Unknown

<220>
<223> Obtained from an environmental sample

<400> 115
atgacgaacc gtaaatacgaa cgtgcaccgt tcattgaccg atgatttgct cgatgggtgtc 60
ttcgcggagg caaaagcggg caaagttgag aagtaccgtg ccaccgggat ccttggaacg 120
ctattcggat tcaactgtggc gtcctccatc atgttggcgg cttgcagcaa cgcacaagag 180
aatgtttccac cagttgcttc atccaccgca cagagcaata tcaccagga gaacgttccg 240
ccgctcaaag atgcgttttaa gggcaagttc ttgattggca ccgcggtgag caatcgcttg 300
ctggaggagc aagatccggc cacggaagcc ttggtgcgca ggcacttcga tgctctcacg 360
gcggaaaacg ccatgaagcc ggatgcactg caaccgcgcg aaggccagtt caacttcgtc 420
gccgcccagc gtctgggtga aatcgcccag caaagcggcg cgacagtggg cggccacacg 480
ctgggtctggc actcccaaac gccaggctgg ttcttccagg gtccgaatgg ccagccagcg 540
agtcgagaac tggccctggc gcggatgcga acacacatca agacgggtggg gggacgctac 600
aaagggcgca tcaagcagtg ggatgtgggtc aacgaagcga tcaacgacgg ccctggcgtg 660
ctgcggaaca gtccgtggct gcgtgccatc ggcgaagact acatcgccga agcgttccgc 720
gccgcgcacg aagccgatcc tgacgccatt ctggtctaca acgactacaa catcgaactc 780
aactacaagc gtcccaaggc gctggaactg ctaaagaagc tcatcgacca gaaggttccg 840
attcatgggt tgggcattca ggctcactgg cgcgtctggc ctgaagggtg tggtcaccga actggacatc 900
gaagccatca aacagttcgc cgcgctgggc ctgaagggtg tggtcaccga actggacatc 960
ggtgtgctgc ccactcagta tcagggggct gacatctcgg cgcggtgaaac catgacaccc 1020
gaacagcaag cggtgatgaa cccttacact cagggccttg cggctgaagt ggcacagcaa 1080
catgccgagc gctaccgaca ggccttcgag ctgttcctgc gccacaagga tgtgattggt 1140
cgcgtcacgc tctggggcac gcatgatggc gaatcctggc tgaacggttt tccggtgcgg 1200
ggccgcaccg actatccctt gctcttcgac gcgcgggtatc agccaaaacc agccttcttc 1260
gccgtcaggc aggttgacaa agcttctcga gtacttctct ag 1320
acagcgaaga caattcaaaa agcttctcga 1362

<210> 116
<211> 453
<212> PRT
<213> Unknown

<220>
<223> Obtained from an environmental sample

<400> 116
Met Thr Asn Arg Lys Ser Asn Val His Arg Ser Leu Thr Asp Asp Leu
1 10 15
Leu Asp Gly Val Phe Ala Glu Ala Lys Ala Gly Lys Val Glu Lys Tyr
20 25 30
Arg Ala Thr Gly Ile Leu Gly Thr Leu Phe Gly Phe Thr Val Ala Ser
35 40 45
Ser Ile Met Leu Ala Ala Cys Ser Asn Ala Gln Glu Asn Val Pro Pro
50 55 60
Val Ala Ser Ser Thr Ala Gln Ser Asn Ile Thr Gln Glu Asn Val Pro
65 70 75 80
Pro Leu Lys Asp Ala Phe Lys Gly Lys Phe Leu Ile Gly Thr Ala Val
85 90 95
Ser Asn Arg Leu Leu Glu Gly Gln Asp Pro Ala Thr Glu Ala Leu Val
100 105 110
Arg Arg His Phe Asp Ala Leu Thr Ala Glu Asn Ala Met Lys Pro Asp
115 120 125
Ala Leu Gln Pro Arg Glu Gly Gln Phe Asn Phe Val Ala Ala Asp Arg
130 135 140
Leu Val Glu Ile Ala Gln Gln Ser Gly Ala Thr Val Val Gly His Thr
145 150 155 160
Leu Val Trp His Ser Gln Thr Pro Gly Trp Phe Phe Gln Gly Pro Asn
165 170 175
Gly Gln Pro Ala Ser Arg Glu Leu Ala Leu Ala Arg Met Arg Thr His
180 185 190
Ile Lys Thr Val Val Gly Arg Tyr Lys Gly Arg Ile Lys Gln Trp Asp
195 200 205
Val Val Asn Glu Ala Ile Asn Asp Gly Pro Gly Val Leu Arg Gln Ser
210 215 220
Pro Trp Leu Arg Ala Ile Gly Glu Asp Tyr Ile Ala Glu Ala Phe Arg

225 230 235 240
 Ala Ala His Glu Ala Asp Pro Asp Ala Ile Leu Val Tyr Asn Asp Tyr
 245 250 255
 Asn Ile Glu Leu Asn Tyr Lys Arg Pro Lys Ala Leu Glu Leu Lys
 260 265 270
 Lys Leu Ile Asp Gln Lys Val Pro Ile His Gly Val Gly Ile Gln Ala
 275 280 285
 His Trp Arg Met Thr Pro Pro Leu Ala Glu Thr Glu Glu Ala Ile Lys
 290 295 300
 Gln Phe Ala Ala Leu Gly Leu Lys Val Met Phe Thr Glu Leu Asp Ile
 305 310 315 320
 Gly Val Leu Pro Thr Gln Tyr Gln Gly Ala Asp Ile Ser Ala Arg Glu
 325 330 335
 Thr Met Thr Pro Glu Gln Gln Ala Val Met Asn Pro Tyr Thr Gln Gly
 340 345 350
 Leu Pro Ala Glu Val Ala Gln Gln His Ala Glu Arg Tyr Arg Gln Ala
 355 360 365
 Phe Glu Leu Phe Leu Arg His Lys Asp Val Ile Gly Arg Val Thr Leu
 370 375 380
 Trp Gly Thr His Asp Gly Glu Ser Trp Leu Asn Gly Phe Pro Val Arg
 385 390 395 400
 Gly Arg Thr Asp Tyr Pro Leu Leu Phe Asp Arg Arg Tyr Gln Pro Lys
 405 410 415
 Pro Ala Phe Phe Ala Val Arg Gln Val Ala Gln Ala His Thr Val Gln
 420 425 430
 Thr Thr Gly Ala Gln Thr Gln Ala Thr Ala Lys Thr Ile Gln Lys Ala
 435 440 445
 Ser Arg Glu Tyr Phe
 450

<210> 117
 <211> 1437
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 117
 atgacgaacc gtaaattgaa cgtgcaccgt tcattgagcg atgatttgct cgatggcgcc 60
 ttgcgcgagt caaaagcggg caaagtgtgag aaataccgtg ccacggggat ccttggaacg 120
 ctattcggat tcaactgtggc gtcctccatc atgttgccgg cttgcagcaa cgcacaagag 180
 aatgctccac cagttgcttc atccaccgca caaagcaata tcaccagga gaacgttccg 240
 ccgctcaagg atgcgtttaa gggcaagttc ttgattggca ccatcgcgag caatcgcttg 300
 ctgcagggac aagatccagc cacagaagcc ctggtgcgca ggcacttcga cgccctcacg 360
 gcggaaaatg ccatgaagcc tgatgccatg caaccagag aggggtgagtt caactttgcc 420
 gccgctgacc gcctggtgga aatcgcccag caaagcggcg ccacgggtggt cggccacacc 480
 ttggtctggc atagccaaac gccaaagctgg ttcttccagg gtccagatgg ccaaccggcg 540
 agtcgggaac tggccttggc acggatgcga acgcacatca agactgtggt gggacgctac 600
 aaaggacgca tcaagcaatg ggaatgtggtc aacgaagcga tcaacgacgg ccctggagtg 660
 ctgcggccat cgccgtggtt gcgcgccatc ggcgaagact tcatcgccga agcggtccgc 720
 gccgcgcacg aagctgatcc cgacgcgatt ctctgtctaca acgactacaa catcgagctc 780
 aactacaagc gtcccaaggc gctggaacta ctgaagagac tcatcgagca gaaggttccg 840
 attcatggtg tgggcattca ggctcactgg cgcatgaccc cgccgctggc cgagatggaa 900
 gagaccatca agcagttttc ggctttgggc ttgaaggtaa tgatcaccga gttggacatt 960
 ggtgtattgc caacacaata ccagggtgcc gacatctcgg ctgcgagac catgacaccc 1020
 gaacagcaag cggatgatgaa cccttacacg cagggttggt cggctgaagt ggcgcagcaa 1080
 catgccgacg gttatcgta cggcgtttgag ctgttcatgc gttacaagga tgtgattggt 1140
 cgcgctaccc tttggggcac gcatgatggc gaatcttggc tgaacggttt tcccgttcgt 1200
 ggccgcacgg attatcctct actgttcgac gcgcggatc agcctaagcc cgccttcttc 1260
 gcggtgcaaa aggtcgcgca ggcgcagaac gcacaggcag caaccgatca agcaccactt 1320
 gcacaaaacc cagttgcgca gaagaaatct gcaccaaggc aggcggctca aaatcagacc 1380
 actcaaaagc cagtgtgata aaagcaaagt gcggcaagtc gggccgcaga aaagtaa 1437

<210> 118
 <211> 478
 <212> PRT
 <213> Unknown

<220>

<223> obtained from an environmental sample

<400> 118

Met Thr Asn Arg Lys Leu Asn Val His Arg Ser Leu Ser Asp Asp Leu
 1 5 10 15
 Leu Asp Gly Ala Phe Ala Glu Ser Lys Ala Gly Lys Val Glu Lys Tyr
 20 25 30
 Arg Ala Thr Gly Ile Leu Gly Thr Leu Phe Gly Phe Thr Val Ala Ser
 35 40 45
 Ser Ile Met Leu Ala Ala Cys Ser Asn Ala Gln Glu Asn Ala Pro Pro
 50 55 60
 Val Ala Ser Ser Thr Ala Gln Ser Asn Ile Thr Gln Glu Asn Val Pro
 65 70 75 80
 Pro Leu Lys Asp Ala Phe Lys Gly Lys Phe Leu Ile Gly Thr Ile Ala
 85 90 95
 Ser Asn Arg Leu Leu Gln Gly Gln Asp Pro Ala Thr Glu Ala Leu Val
 100 105 110
 Arg Arg His Phe Asp Ala Leu Thr Ala Glu Asn Ala Met Lys Pro Asp
 115 120 125
 Ala Met Gln Pro Arg Glu Gly Glu Phe Asn Phe Ala Ala Ala Asp Arg
 130 135 140
 Leu Val Glu Ile Ala Gln Gln Ser Gly Ala Thr Val Val Gly His Thr
 145 150 155 160
 Leu Val Trp His Ser Gln Thr Pro Ser Trp Phe Phe Gln Gly Pro Asp
 165 170 175
 Gly Gln Pro Ala Ser Arg Glu Leu Ala Leu Ala Arg Met Arg Thr His
 180 185 190
 Ile Lys Thr Val Val Gly Arg Tyr Lys Gly Arg Ile Lys Gln Trp Asp
 195 200 205
 Val Val Asn Glu Ala Ile Asn Asp Gly Pro Gly Val Leu Arg Pro Ser
 210 215 220
 Pro Trp Leu Arg Ala Ile Gly Glu Asp Phe Ile Ala Glu Ala Phe Arg
 225 230 235 240
 Ala Ala His Glu Ala Asp Pro Asp Ala Ile Leu Val Tyr Asn Asp Tyr
 245 250 255
 Asn Ile Glu Leu Asn Tyr Lys Arg Pro Lys Ala Leu Glu Leu Lys
 260 265 270
 Arg Leu Ile Glu Gln Lys Val Pro Ile His Gly Val Gly Ile Gln Ala
 275 280 285
 His Trp Arg Met Thr Pro Pro Leu Ala Glu Met Glu Glu Thr Ile Lys
 290 295 300
 Gln Phe Ser Ala Leu Gly Leu Lys Val Met Ile Thr Glu Leu Asp Ile
 305 310 315 320
 Gly Val Leu Pro Thr Gln Tyr Gln Gly Ala Asp Ile Ser Ala Arg Glu
 325 330 335
 Thr Met Thr Pro Glu Gln Gln Ala Val Met Asn Pro Tyr Thr Gln Gly
 340 345 350
 Leu Pro Ala Glu Val Ala Gln Gln His Ala Glu Arg Tyr Arg Gln Ala
 355 360 365
 Phe Glu Leu Phe Met Arg Tyr Lys Asp Val Ile Gly Arg Val Thr Leu
 370 375 380
 Trp Gly Thr His Asp Gly Glu Ser Trp Leu Asn Gly Phe Pro Val Arg
 385 390 395 400
 Gly Arg Thr Asp Tyr Pro Leu Leu Phe Asp Arg Arg Tyr Gln Pro Lys
 405 410 415
 Pro Ala Phe Phe Ala Val Gln Lys Val Ala Gln Ala Gln Asn Ala Gln
 420 425 430
 Ala Ala Thr Asp Gln Ala Pro Leu Ala Gln Asn Pro Val Ala Gln Lys
 435 440 445
 Lys Ser Ala Pro Arg Gln Ala Ala Gln Asn Gln Thr Thr Gln Lys Pro
 450 455 460
 Val Val Gln Lys Gln Ser Ala Ala Ser Arg Ala Ala Glu Lys
 465 470 475

<210> 119

<211> 2559

<212> DNA

<213> Unknown

<220>
<223> obtained from an environmental sample

<400> 119
 atgaaaaaaa gattgttagc gttgatagtg acattagttt ttattatctc attgtttaat 60
 cccatattca ccacaccttt aacaaatgta gcaaaggctc aaagtaacca aacaaattta 120
 aaatttgact ttgaaaacgg tactcaaggt tggggagcaa gaggtgtttc aacaactatt 180
 gcaaccggtt acgagcaagc ttatgaagga agttattctt taaagggttc aggtagaagt 240
 tcaacgtggg atggagcagt tgtggatatc acatcaagta tticagcaaa tgtcacctat 300
 acagtttctt cagcacaacc agcttcctcg ggtgttggta aatccttgac atttgaaagc 360
 tatgtcaaag ataacacagg cgaaaaatac atccagggtg cagacaaagt ggttatgcca 420
 aacittttgga agcagctctt tgggaagttc acaatcacaa catcaaatcc aattcaaaaa 480
 gtagaacctt ttgtatgtgt tccatctaac aaatccttag gattttatct tgacaatgta 540
 gttatttact cagcacaacc agcttcctcg ggtgttggta aatccttgac atttgaaagc 600
 ggtagcactg aggggttttgt tcagagaggt tcagcttcat tgacagtgtg cgacgggtgta 660
 tactatcatt ctccaacaaa agcattatat gtgacaggaa ggacagctac atggcagggg 720
 gcacagatag atatgacaag tttgcttgag aagggcaagg attatcagtt tagcatatgg 780
 gtatatcaaa atagtggaa tgatcagaag ataaccctta cgatgcaaag gaagaatgaa 840
 gatggaaacta cgaggttatg ttctataaag tatcagcaaa cagttccatc tggtagatgg 900
 acagaagtaa caggttcata cacagtgcct cagacagcaa cacagcttat attctatggt 960
 gaatcaccga atatttaattt tgacttctac cttgatgact ttacagcggg tgacaaaaac 1020
 ccacctgttg taaaccagg gcttggttaa tcttgacat ttgaaagcgg tagcactgag 1080
 ggttttgttc agagaggttc agcttcattg acagttgtcg acggtgtata ctatcattct 1140
 ccaacaaaag cattgtatgt gacaggaagg acagctacat ggcaggggtg acagatagat 1200
 atgacaagtt tgcttgagaa gggcaaggat tatcagttta gcatatgggt atatcaaaat 1260
 agtggaaagt atcagaagat aacccttacg atgcaaagga agaatagaaga tggaactacg 1320
 agttatgatt ctataaagta tccagcaaca gttccatctg gtacatggac agaagtaaca 1380
 ggttcataca cagtgcctca gacagcaaca cagcttatat tctatgttga atcaccgaat 1440
 attaattttg acttctacct tgatgacttt acagtaatag ataaaaatcc agtgacggta 1500
 ccgattgcag caaaagaacc cgaatgggaa attccgtcac tttgtcagca atatagtcaa 1560
 tatttctcaa taggtgttgc aataccgtat aaagtacttc aaaatcctgt tgaaagagca 1620
 atggtgttaa aacacttcaa cagtataaca gctgaaaatg agatgaaacc tgacgctctg 1680
 caaagaacag aagggaaactt tacattcgat atagcagacc agtatgtaaa cttcgcacag 1740
 caaaacggta ttggaattag agggcatact ctgggtatgg acagccaagt acctaattgg 1800
 ttcttccagc acagtgatgg aacttcactt gatccaagca atccagatga taagcaactt 1860
 ttgagagata gattgaaaaa tcatattcaa actgttatgt caagatacaa agggaaagtc 1920
 tatgcatggg atgttgtaaa cgaggcaata gatgaaagcc agcctgatgg atttagaaga 1980
 agcgaatggt acagaatact tgggtccaaca cctgagacaa atggtattcc agaatacatt 2040
 gtgcttgctt tcaggtatgc aagagaggcg gatccggatg caaaactttt ctacaatgac 2100
 tacaacacag agatatctaa aaaaagacag tttatatatg acatggtaaa aaagctacat 2160
 gatattgggt taattgatgg tgttgggttg caagggcata taaatgttga ttctccaaca 2220
 gtaaaagata tagaagatac aatcaatctt ttctcaacaa ttcctggact tgagatacag 2280
 gtaacagagc ttgacataag cgtttacaca agcagcagtc agcgttatga tacgcttctc 2340
 caggatataa tgataaaaca agcaatgaag tttaaagaac tatttgaaat gttaaagaga 2400
 catagtgata gagtcacaaa tgtgacactt tggggaccta aggatgatta ttcattggct 2460
 tcaaaggata gaaataactg gccattgctt ttgacagca actaccaggc aaaatacagc 2520
 tactgggcaa ttcaaaaagc ttctcgagag tacttctag 2559

<210> 120
 <211> 852
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(33)

<400> 120
 Met Lys Lys Arg Leu Leu Ala Leu Ile Val Thr Leu Val Phe Ile Ile
 1 5 10 15
 Ser Leu Phe Asn Pro Ile Phe Thr Thr Pro Leu Thr Asn Val Ala Lys
 20 25 30
 Ala Gln Ser Asn Gln Thr Asn Leu Lys Phe Asp Phe Glu Asn Gly Thr
 35 40 45
 Gln Gly Trp Gly Ala Arg Gly Val Ser Thr Thr Ile Ala Thr Val Tyr
 50 55 60

Glu 65 Gln Ala Tyr Glu 70 Gly 75 Ser Tyr Ser Leu Lys 75 Val Ser Gly Arg Ser 80
 Ser Thr Trp Asp Gly 85 Ala Val Val Asp Ile 90 Thr Ser Ser Ile Ser 95 Ala
 Asn Val Thr Tyr 100 Thr Val Ser Leu Phe 105 Val Arg His Ser Asp 110 Val Lys
 Pro Gln Arg Phe Ser Val Tyr Val Tyr Val Lys Asp Asn 125 Thr Gly Glu
 Lys Tyr 130 Ile Gln Val Ala Asp 135 Lys Val Val Met Pro 140 Asn Phe Trp Lys
 Gln 145 Leu Phe Gly Lys Phe 150 Thr Ile Thr Thr Ser 155 Asn Pro Ile Gln Lys 160
 Val Glu Leu Leu Val 165 Cys Val Pro Ser Asn 170 Lys Ser Leu Gly Phe Tyr 175
 Leu Asp Asn Val 180 Val Ile Thr Ser Ala 185 Gln Pro Ala Ser Ser Gly Val 190
 Val Lys Ser 195 Cys Thr Phe Glu Ser Gly Ser Thr Glu Gly Phe Val Gln 205
 Arg Gly 210 Ser Ala Ser Leu Thr 215 Val Val Asp Gly Val 220 Tyr Tyr His Ser
 Pro Thr Lys Ala Leu Tyr 230 Val Thr Gly Arg Thr 235 Ala Thr Trp Gln Gly 240
 Ala Gln Ile Asp Met 245 Thr Ser Leu Leu Glu 250 Lys Gly Lys Asp Tyr Gln 255
 Phe Ser Ile Trp Val Tyr Gln Asn Ser 265 Gly Ser Asp Gln Lys Ile Thr 270
 Leu Thr Met 275 Gln Arg Lys Asn Glu 280 Asp Gly Thr Thr Ser Tyr Asp Ser
 Ile Lys 290 Tyr Gln Gln Thr Val 295 Gln Thr Ala Thr Gln Leu Ile Phe Tyr Val 320
 Gly 305 Ser Tyr Thr Val Pro 310 Phe Asp Phe Tyr 330 Leu Asp Asp Phe Thr Ala 335
 Glu Ser Pro Asn Ile 325 Asn Pro Pro Val Val Asn 345 Pro Gly Leu Val Lys Ser Cys 350
 Val Asp Lys Asn 340 Gly Ser Thr Glu 360 Gly Phe Val Gln Arg Gly Ser Ala 365
 Thr Phe Glu 355 Ser Gly Ser Thr Glu 360 Gly Phe Val Gln Arg Gly Ser Ala 365
 Ser Leu Thr Val Val Asp Gly 375 Val Tyr Tyr His Ser Pro Thr Lys Ala 380
 Leu Tyr Val Thr Gly Arg 390 Thr Ala Thr Trp Gln Gly Ala Gln Ile Asp 400
 Met Thr Ser Leu Leu 405 Glu Lys Gly Lys Asp Tyr Gln Phe Ser Ile Trp 415
 Val Tyr Gln Asn 420 Ser Gly Ser Asp Gln Lys Ile Thr Leu Thr Met Gln 430
 Arg Lys Asn Glu Asp Gly Thr Thr Ser Tyr Asp Ser Ile Lys Tyr Gln 445
 Gln Thr Val Pro Ser Gly Thr Trp Thr Glu Val Thr Gly Ser Tyr Thr 460
 Val Pro Gln Thr Ala Thr 470 Gln Leu Ile Phe Tyr Val Glu Ser Pro Asn 480
 Ile Asn Phe Asp Phe 485 Tyr Leu Asp Asp Phe Thr Val Ile Asp Lys Asn 495
 Pro Val Thr Val 500 Pro Ile Ala Ala Lys 505 Glu Pro Glu Trp Glu Ile Pro 510
 Ser Leu Cys Gln Gln Tyr Ser Gln Tyr Phe Ser Ile Gly Val Ala Ile 525
 Pro Tyr Lys Val Leu Gln Asn 535 Pro Val Glu Arg Ala Met Val Leu Lys 540
 His Phe Asn Ser Ile Thr Ala Glu Asn Glu Met Lys Pro Asp Ala Leu 560
 Gln Arg Thr Glu Gly 565 Asn Phe Thr Phe Asp Ile Ala Asp Gln Tyr Val 575
 Asn Phe Ala Gln Gln Asn Gly Ile Gly 585 Ile Arg Gly His Thr Leu Val 590
 Trp His Ser 595 Gln Val Pro Asn Trp Phe Phe Gln His Ser Asp Gly Thr 605
 Ser Leu Asp Pro Ser Asn Pro Asp Asp Lys Gln Leu Leu Arg Asp Arg

610 615 620
 Leu Lys Asn His Ile Gln Thr Val Met Ser Arg Tyr Lys Gly Lys Val
 625 630 635 640
 Tyr Ala Trp Asp Val Asn Glu Ala Ile Asp Glu Ser Gln Pro Asp
 645 650 655
 Gly Phe Arg Arg Ser Glu Trp Tyr Arg Ile Leu Gly Pro Thr Pro Glu
 660 665 670
 Thr Asn Gly Ile Pro Glu Tyr Ile Val Leu Ala Phe Arg Tyr Ala Arg
 675 680 685
 Glu Ala Asp Pro Asp Ala Lys Leu Phe Tyr Asn Asp Tyr Asn Thr Glu
 690 695 700
 Ile Ser Lys Lys Arg Gln Phe Ile Tyr Asp Met Val Lys Lys Leu His
 705 710 715 720
 Asp Met Gly Leu Ile Asp Gly Val Gly Leu Gln Gly His Ile Asn Val
 725 730 735
 Asp Ser Pro Thr Val Lys Asp Ile Glu Asp Thr Ile Asn Leu Phe Ser
 740 745 750
 Thr Ile Pro Gly Leu Glu Ile Gln Val Thr Glu Leu Asp Ile Ser Val
 755 760 765
 Tyr Thr Ser Ser Ser Gln Arg Tyr Asp Thr Leu Pro Gln Asp Ile Met
 770 775 780
 Ile Lys Gln Ala Met Lys Phe Lys Glu Leu Phe Glu Met Leu Lys Arg
 785 790 795 800
 His Ser Asp Arg Val Thr Asn Val Thr Leu Trp Gly Leu Lys Asp Asp
 805 810 815
 Tyr Ser Trp Leu Ser Lys Asp Arg Asn Asn Trp Pro Leu Leu Phe Asp
 820 825 830
 Ser Asn Tyr Gln Ala Lys Tyr Ser Tyr Trp Ala Ile Gln Lys Ala Ser
 835 840 845
 Arg Glu Tyr Phe
 850

<210> 121

<211> 1905

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample

<400> 121

atgaagcata	tttttattgt	attaattggt	tccctgctgt	ttagcttcgg	gggatatgct	60
caacaaacca	ttagcagagc	tccgcagggg	tttgaccagc	aacgtgcccg	cattgcatcc	120
ggtaaagttg	aaatcgtaac	ctataaatcg	aaaaccgtag	gagtgaatcg	ctctgcacgt	180
gtttatacac	cagccggatt	ctcaaaaaag	aagaaatatac	ctgtgcttta	tttattacat	240
ggcattggag	gcgacgaaga	tgagtggtag	aaaaacggcg	ttcctcatat	tattttcgac	300
aacctgattg	ccgacggcaa	aatggaaccg	atgattgtgg	tactgcccac	tggtcgcgcc	360
atgaaaaacg	accgtgccga	aggaaatatt	ttcgacaaag	agaaagttga	agcctttgca	420
acattcgaaa	aagacctttt	aaacgattta	ataccgttta	tcgaaaaaaa	ataccctgta	480
ttaaaaaccc	gtgagtttcg	cgccattgca	ggattatcaa	tgggcggcgg	acaatcgctc	540
aattttggac	tgggaaatct	cgacaaatct	gcatgggtag	gcggcttttc	atcggccccc	600
aataccaaaa	tgcccgtgta	gittggtcca	aacactcaaa	aggcaacaga	aatgcttaag	660
ttgctttatg	tgtcttgtgg	cgataaagac	aatttaatgc	aggttagtca	gcgcaccac	720
gattatctga	aagccaataa	agtacctcat	attttcaggg	ttattcctga	tggttaccac	780
gattttaatg	tttggaaaga	cgatttgtat	cattacgtac	aaatgctgtt	taagcctgtg	840
gtaatgcccg	tagcagcagc	tactttaaaa	gatgcttata	aagggaaatt	cttcattgga	900
actgccctta	atacccttca	aattttgggt	accgctgttg	atgaagtga	tattgttaaa	960
accattttca	actccattgt	tgccgaaaac	tgtatgaaga	gtggcccgat	gcaaccacaa	1020
gaagggaaat	ttgagtttag	cctggccgat	aagttttag	agtttggagt	taaaaacaat	1080
atgcagatta	ttggtcatac	gcttatctgg	cattcgcagg	caccccgctg	gttttttacc	1140
gacagcgaag	gcaaggacgt	atcgcccag	gtgcttaccg	agcgcatgaa	aaaccatatac	1200
tatactgttg	ttggccggtta	caaaggcaag	gtgcacggat	gggatgtggt	gaatgaagcc	1260
atagttgacg	atggcagcta	ccgaaacagt	aaatactacc	aaatactggg	cgaagatttt	1320
atcaaactgg	cattccagtt	tgctcatgaa	gccgacccc	atgcagaatt	gtactacaac	1380
gattattccg	aattttgttcc	tgccaaaaga	gaaggcattg	cccgcattggt	gaagaaactc	1440
aaagaccagg	gcattagaat	cgacggcggt	ggatttcagt	gccatatttg	cctcgattat	1500
ccaggcctgg	atgaatacga	aaaaaccatt	caattaattg	ccaacgaggg	ggtaaaagta	1560
atgataaccg	aaatggaagt	atcgggtatta	cccatgccc	actggcgcg	tggtgctgag	1620
atttcggcca	gttttcgaata	tcaacagaaa	ttaaattccct	acaccgaagg	attgcccgat	1680

tcagtgaatg	ctcaattaga	acagcgttat	gtcgcactttt	tcacgctctt	ccttaaatat	1740
cacgaagtga	ttccaagagt	tacggtttgg	gggggtaacg	atggcaactc	atggaaaaac	1800
ggattcccgg	tgcgtggaag	aaccgactac	ccattgttat	tcgaccggaa	aaatcagcct	1860
aaatcagctg	ttgccaaatt	aattgaactg	gctaatacaa	agtag		1905

<210> 122
 <211> 634
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(20)

<400> 122

Met	Lys	His	Ile	Phe	Ile	Val	Leu	Ile	Val	Ser	Leu	Leu	Phe	Ser	Phe
1				5					10					15	
Gly	Gly	Tyr	Ala	Gln	Gln	Thr	Ile	Ser	Arg	Ala	Pro	Gln	Gly	Phe	Asp
			20					25					30		
Gln	Gln	Arg	Ala	Gly	Ile	Ala	Ser	Gly	Lys	Val	Glu	Ile	Val	Thr	Tyr
		35					40					45			
Lys	Ser	Lys	Thr	Val	Gly	Val	Asn	Arg	Ser	Ala	Arg	Val	Tyr	Thr	Pro
	50					55					60				
Ala	Gly	Phe	Ser	Lys	Lys	Lys	Lys	Tyr	Pro	Val	Leu	Tyr	Leu	Leu	His
65				70					75					80	
Gly	Ile	Gly	Gly	Asp	Glu	Asp	Glu	Trp	Tyr	Lys	Asn	Gly	Val	Pro	His
			85						90					95	
Ile	Ile	Phe	Asp	Asn	Leu	Ile	Ala	Asp	Gly	Lys	Met	Glu	Pro	Met	Ile
			100				105						110		
Val	Val	Leu	Pro	Asn	Gly	Arg	Ala	Met	Lys	Asn	Asp	Arg	Ala	Glu	Gly
		115					120					125			
Asn	Ile	Phe	Asp	Lys	Glu	Lys	Val	Glu	Ala	Phe	Ala	Thr	Phe	Glu	Lys
		130				135					140				
Asp	Leu	Leu	Asn	Asp	Leu	Ile	Pro	Phe	Ile	Glu	Lys	Lys	Tyr	Pro	Val
145					150					155				160	
Leu	Lys	Thr	Arg	Glu	Phe	Arg	Ala	Ile	Ala	Gly	Leu	Ser	Met	Gly	Gly
			165						170					175	
Gly	Gln	Ser	Leu	Asn	Phe	Gly	Leu	Gly	Asn	Leu	Asp	Lys	Phe	Ala	Trp
			180					185					190		
Val	Gly	Gly	Phe	Ser	Ser	Ala	Pro	Asn	Thr	Lys	Met	Pro	Ala	Glu	Leu
		195					200					205			
Val	Pro	Asn	Thr	Gln	Lys	Ala	Thr	Glu	Met	Leu	Lys	Leu	Leu	Tyr	Val
	210					215					220				
Ser	Cys	Gly	Asp	Lys	Asp	Asn	Leu	Met	Gln	Val	Ser	Gln	Arg	Thr	His
225					230					235				240	
Asp	Tyr	Leu	Lys	Ala	Asn	Lys	Val	Pro	His	Ile	Phe	Arg	Val	Ile	Pro
			245						250					255	
Asp	Gly	Tyr	His	Asp	Phe	Asn	Val	Trp	Lys	Asp	Asp	Leu	Tyr	His	Tyr
			260					265					270		
Val	Gln	Met	Leu	Phe	Lys	Pro	Val	Val	Met	Pro	Val	Ala	Ala	Ala	Thr
		275					280					285			
Leu	Lys	Asp	Ala	Tyr	Lys	Gly	Lys	Phe	Phe	Ile	Gly	Thr	Ala	Leu	Asn
		290				295					300				
Thr	Pro	Gln	Ile	Leu	Gly	Thr	Ala	Val	Asp	Glu	Val	Asn	Ile	Val	Lys
305					310					315				320	
Thr	His	Phe	Asn	Ser	Ile	Val	Ala	Glu	Asn	Cys	Met	Lys	Ser	Gly	Pro
			325						330					335	
Met	Gln	Pro	Gln	Glu	Gly	Lys	Phe	Glu	Phe	Asp	Leu	Ala	Asp	Lys	Phe
			340					345					350		
Val	Glu	Phe	Gly	Val	Lys	Asn	Asn	Met	Gln	Ile	Ile	Gly	His	Thr	Leu
		355					360					365			
Ile	Trp	His	Ser	Gln	Ala	Pro	Arg	Trp	Phe	Phe	Thr	Asp	Ser	Glu	Gly
	370					375					380				
Lys	Asp	Val	Ser	Pro	Glu	Val	Leu	Thr	Glu	Arg	Met	Lys	Asn	His	Ile
385					390					395				400	
Tyr	Thr	Val	Val	Gly	Arg	Tyr	Lys	Gly	Lys	Val	His	Gly	Trp	Asp	Val
			405						410					415	

Val Asn Glu Ala Ile Val Asp Asp Gly Ser Tyr Arg Asn Ser Lys Phe
 420 425 430
 Tyr Gln Ile Leu Gly Glu Asp Phe Ile Lys Leu Ala Phe Gln Phe Ala
 435 440 445
 His Glu Ala Asp Pro Asp Ala Glu Leu Tyr Tyr Asn Asp Tyr Ser Glu
 450 455 460
 Phe Val Pro Ala Lys Arg Glu Gly Ile Ala Arg Met Val Lys Lys Leu
 465 470 475 480
 Lys Asp Gln Gly Ile Arg Ile Asp Gly Val Gly Phe Gln Cys His Ile
 485 490 495
 Gly Leu Asp Tyr Pro Gly Leu Asp Glu Tyr Glu Lys Thr Ile Gln Leu
 500 505 510
 Ile Ala Asn Glu Gly Val Lys Val Met Ile Thr Glu Met Glu Ile Ser
 515 520 525
 Val Leu Pro Met Pro Asp Trp Arg Val Gly Ala Glu Ile Ser Ala Ser
 530 535 540
 Phe Glu Tyr Gln Gln Lys Leu Asn Pro Tyr Thr Glu Gly Leu Pro Asp
 545 550 555 560
 Ser Val Asn Ala Gln Leu Glu Gln Arg Tyr Val Asp Phe Phe Thr Leu
 565 570 575
 Phe Leu Lys Tyr His Glu Val Ile Pro Arg Val Thr Val Trp Gly Val
 580 585 590
 Asn Asp Gly Asn Ser Trp Lys Asn Gly Phe Pro Val Arg Gly Arg Thr
 595 600 605
 Asp Tyr Pro Leu Leu Phe Asp Arg Lys Asn Gln Pro Lys Ser Ala Val
 610 615 620
 Ala Lys Leu Ile Glu Leu Ala Asn Thr Lys
 625 630

<210> 123
 <211> 1200
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 123
 atgatcgttg gatttctcgtt tatgctgctg cttccttttag ggatgacgaa tgcattggca 60
 aaaacggaac cagcgtacgc taaaaagccg cgaatcagcg cattgcacgc ccctcaattg 120
 gatcagcgct acaaagattc cttcactatt ggggcggccg ttgaacctta tcagttgcaa 180
 aacgaaaaag acgtccaaat gctgaaacgc catTTtaaca gcattgtcgc tgagaacggt 240
 atgaaaccga tcaacatcca acccgaagaa ggaaagtcca atTTtgctga ggcggatcaa 300
 atcgtccgat ttgctaaaaa acatcatatg gatattcgtt tccatacact cgTTtgccac 360
 agccaagtac ctcaatgggt ctttcttgac aaggaaggca agccgatggt caatgaaacg 420
 gatccggcaa agcgcgaaca aaataaacag ctgttactga aacggctcga aatccatatt 480
 aaaacgattg tcgaacggta taaagacgac atcaaatatt gggacgtcgt gaacgaggta 540
 gtcgggggatg atggaaaatt gcgcaattcc ccgtggtatc aaatcgccgg catcgattat 600
 atcaaggtag cattccaaac ggcgagaaca tatggcggca acaagattaa actgtacatc 660
 aacgattaca ataccgaagt ggaaccgaag cgaagcgtc tttataactt agtgaaacaa 720
 ttaaaagaag aaggcgttcc cattgacggg attggccacc agtcccatat ccaaattggc 780
 tggccttctg aagaagaaat cgaaaaaacg atcaacatgt ttgccgatct aggggttagac 840
 aatcaaatta cggagctgga tgtgagcatg tacggctggc cgccgcgcgc ctaccctcgc 900
 tatgacgcca ttccggaaca aaagtTTTTg gaccaagcgg ctcgctatga ccgattgttt 960
 aagctgtacg aaaaacttgg cgataaaatc agcaacgtca cttctgggg catcgccgac 1020
 aaccatacgt ggctcgacag ccgtgcggat gtgtactatg acgccaacgg gaatgtttgtg 1080
 gttgaccgga acgctccgta cgcaaaagtg gaaaaaggga aaggaaaaga tgcgccgttt 1140
 ctgttcgacc ccgaatacca cgtaaaacct gcgtattggg ccattatcga tcataagtga 1200

<210> 124
 <211> 399
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(20)

<400> 124
 Met Ile Val Gly Phe Ser Phe Met Leu Leu Leu Pro Leu Gly Met Thr
 1 5 10 15
 Asn Ala Leu Ala Lys Thr Glu Pro Ala Tyr Ala Lys Lys Pro Arg Ile
 20 25 30
 Ser Ala Leu His Ala Pro Gln Leu Asp Gln Arg Tyr Lys Asp Ser Phe
 35 40 45
 Thr Ile Gly Ala Ala Val Glu Pro Tyr Gln Leu Gln Asn Glu Lys Asp
 50 55 60
 Val Gln Met Leu Lys Arg His Phe Asn Ser Ile Val Ala Glu Asn Val
 65 70 75 80
 Met Lys Pro Ile Asn Ile Gln Pro Glu Glu Gly Lys Phe Asn Phe Ala
 85 90 95
 Glu Ala Asp Gln Ile Val Arg Phe Ala Lys Lys His His Met Asp Ile
 100 105 110
 Arg Phe His Thr Leu Val Trp His Ser Gln Val Pro Gln Trp Phe Phe
 115 120 125
 Leu Asp Lys Glu Gly Lys Pro Met Val Asn Glu Thr Asp Pro Ala Lys
 130 135 140
 Arg Glu Gln Asn Lys Gln Leu Leu Leu Lys Arg Leu Glu Ile His Ile
 145 150 155 160
 Lys Thr Ile Val Glu Arg Tyr Lys Asp Asp Ile Lys Tyr Trp Asp Val
 165 170 175
 Val Asn Glu Val Val Gly Asp Asp Gly Lys Leu Arg Asn Ser Pro Trp
 180 185 190
 Tyr Gln Ile Ala Gly Ile Asp Tyr Ile Lys Val Ala Phe Gln Thr Ala
 195 200 205
 Arg Thr Tyr Gly Gly Asn Lys Ile Lys Leu Tyr Ile Asn Asp Tyr Asn
 210 215 220
 Thr Glu Val Glu Pro Lys Arg Ser Ala Leu Tyr Asn Leu Val Lys Gln
 225 230 235 240
 Leu Lys Glu Glu Gly Val Pro Ile Asp Gly Ile Gly His Gln Ser His
 245 250 255
 Ile Gln Ile Gly Trp Pro Ser Glu Glu Glu Ile Glu Lys Thr Ile Asn
 260 265 270
 Met Phe Ala Asp Leu Gly Leu Asp Asn Gln Ile Thr Glu Leu Asp Val
 275 280 285
 Ser Met Tyr Gly Trp Pro Pro Arg Ala Tyr Pro Ser Tyr Asp Ala Ile
 290 295 300
 Pro Glu Gln Lys Phe Leu Asp Gln Ala Ala Arg Tyr Asp Arg Leu Phe
 305 310 315 320
 Lys Leu Tyr Glu Lys Leu Gly Asp Lys Ile Ser Asn Val Thr Phe Trp
 325 330 335
 Gly Ile Ala Asp Asn His Thr Trp Leu Asp Ser Arg Ala Asp Val Tyr
 340 345 350
 Tyr Asp Ala Asn Gly Asn Val Val Val Asp Pro Asn Ala Pro Tyr Ala
 355 360 365
 Lys Val Glu Lys Gly Lys Gly Lys Asp Ala Pro Phe Leu Phe Asp Pro
 370 375 380
 Glu Tyr His Val Lys Pro Ala Tyr Trp Ala Ile Ile Asp His Lys
 385 390 395

<210> 125

<211> 1089

<212> DNA

<213> Unknown

<220>

<223> obtained from an environmental sample

<400> 125

atgttgacga	ccccgacaac	tcaagatcat	gtccccgtgc	tcaaggacgc	tttcaaaggc	60
aagctcctca	ttggagccgt	gctcggttac	gatgctctcc	aggggaagga	cccgtgagt	120
gagaaaattg	cgaccactca	cttcgatgct	ctcactgctg	aaaacagcat	gaagccggct	180
ctcgtgcaac	ccaaagaggg	cgagtttgat	ttcgctgatg	gagatcgtct	ccttgaaatc	240
gcgcagcaat	gcggcgctac	tgcaatcggc	catactctgc	tctggcacca	acaaacgcca	300
cgctggtttt	ttgaagggcc	agatggtcag	cctgctgacc	gtgagttggc	cctggcacgc	360
atgaggaagc	acatttcac	tctcgttggt	cgctataaag	gtcgcattaa	acaatgggat	420

gtgggtgaatg	aggcgattag	cgatgcagag	ggcgagtact	taagaccaaa	gagcccctgg	480
ttcaaagccg	ttggagagga	tcacatcgcg	catgctttcc	aggcagcaca	tgaagctgat	540
cccgatgccca	tccttatcta	taacgactac	aacatcgagc	aggagtacaa	gcgcccgaag	600
gcgatacgcc	tactgaggtc	attacttgag	caggacgttc	ccattcatgc	cgtgggcatt	660
cagggccatt	ggcgtatgga	cactctgaat	gttgccgaaa	tcgaagaagc	tatcgaagaa	720
tttgctgcgc	tgggtctcaa	ggtcatgatc	accgagcttg	atatcagcgt	gctaccgaca	780
aagtatcagg	gagccgatct	cgctactcgg	gaagaattga	cgcctgaaat	caatccctat	840
acggaggaac	tacctgagga	cgttgcccgg	caacatgccg	agtgttatcg	gcaggtcttc	900
gaaatgttcc	tgcgccacaa	ggatgccatt	agccgtgtca	cgctctgggg	cattcacgat	960
ggcagatcat	ggttcaacaa	ctttccggtc	agggggcgca	cagactatcc	tctgctattc	1020
gaccgggaat	gtaaccccaa	gccagcgttt	ttcgccgtct	tgaaagctgc	gcaagaccag	1080
ccacaatga						1089

<210> 126
 <211> 362
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 126

Met	Leu	Thr	Thr	Pro	Thr	Thr	Gln	Asp	His	Val	Pro	Val	Leu	Lys	Asp
1				5					10					15	
Ala	Phe	Lys	Gly	Lys	Leu	Leu	Ile	Gly	Ala	Val	Leu	Gly	Tyr	Asp	Ala
			20					25					30		
Leu	Gln	Gly	Lys	Asp	Pro	Leu	Ser	Glu	Lys	Ile	Ala	Thr	Thr	His	Phe
		35					40					45			
Asp	Ala	Leu	Thr	Ala	Glu	Asn	Ser	Met	Lys	Pro	Ala	Leu	Val	Gln	Pro
		50				55					60				
Lys	Glu	Gly	Glu	Phe	Asp	Phe	Ala	Asp	Gly	Asp	Arg	Leu	Leu	Glu	Ile
65					70				75					80	
Ala	Gln	Gln	Cys	Gly	Ala	Thr	Ala	Ile	Gly	His	Thr	Leu	Leu	Trp	His
			85					90						95	
Gln	Gln	Thr	Pro	Arg	Trp	Phe	Phe	Glu	Gly	Pro	Asp	Gly	Gln	Pro	Ala
			100					105					110		
Asp	Arg	Glu	Leu	Ala	Leu	Ala	Arg	Met	Arg	Lys	His	Ile	Ser	Thr	Leu
		115					120					125			
Val	Gly	Arg	Tyr	Lys	Gly	Arg	Ile	Lys	Gln	Trp	Asp	Val	Val	Asn	Glu
	130					135					140				
Ala	Ile	Ser	Asp	Ala	Glu	Gly	Glu	Tyr	Leu	Arg	Pro	Lys	Ser	Pro	Trp
145					150				155						160
Phe	Lys	Ala	Val	Gly	Glu	Asp	His	Ile	Ala	His	Ala	Phe	Gln	Ala	Ala
			165					170						175	
His	Glu	Ala	Asp	Pro	Asp	Ala	Ile	Leu	Ile	Tyr	Asn	Asp	Tyr	Asn	Ile
		180						185					190		
Glu	Gln	Glu	Tyr	Lys	Arg	Pro	Lys	Ala	Ile	Arg	Leu	Leu	Arg	Ser	Leu
		195					200					205			
Leu	Glu	Gln	Asp	Val	Pro	Ile	His	Ala	Val	Gly	Ile	Gln	Gly	His	Trp
	210					215					220				
Arg	Met	Asp	Thr	Leu	Asn	Val	Ala	Glu	Ile	Glu	Glu	Ala	Ile	Glu	Glu
225					230					235					240
Phe	Ala	Ala	Leu	Gly	Leu	Lys	Val	Met	Ile	Thr	Glu	Leu	Asp	Ile	Ser
			245						250					255	
Val	Leu	Pro	Thr	Lys	Tyr	Gln	Gly	Ala	Asp	Leu	Ala	Thr	Arg	Glu	Glu
		260						265					270		
Leu	Thr	Pro	Glu	Ile	Asn	Pro	Tyr	Thr	Glu	Glu	Leu	Pro	Glu	Asp	Val
		275					280					285			
Ala	Arg	Gln	His	Ala	Glu	Cys	Tyr	Arg	Gln	Val	Phe	Glu	Met	Phe	Leu
	290					295					300				
Arg	His	Lys	Asp	Ala	Ile	Ser	Arg	Val	Thr	Leu	Trp	Gly	Ile	His	Asp
305					310					315					320
Gly	Arg	Ser	Trp	Phe	Asn	Asn	Phe	Pro	Val	Arg	Gly	Arg	Thr	Asp	Tyr
			325						330					335	
Pro	Leu	Leu	Phe	Asp	Arg	Glu	Cys	Asn	Pro	Lys	Pro	Ala	Phe	Phe	Ala
			340					345					350		
Val	Leu	Lys	Ala	Ala	Gln	Asp	Gln	Pro	Gln						
		355					360								

<210> 127
 <211> 960
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 127
 gtggatctcg ctgagaaatg cggcatatat attggtgcag cggttgaacc cggatattta 60
 attatcaggg aatacgctga gattttatcc cgcgaattta acgtggtaac cgcggaaaat 120
 gcattaaaaa ttgaagctat tcatccgcag cgtggagtat attcatttga aggtgcagat 180
 gcaatagttc gatttgcaga aactcatgga atgaaggttc gtggacatac acttgtttgg 240
 caccagcagc ttcttgcatt gataacttct ggaagttacg cttgggagga gtggaagaat 300
 attctccgtg agcatgtaat gagcgttggt ggacgatata agggccaaat atatgcatgg 360
 gatgtggtta acgaagcaat attagataac ggttcattaa gagataatgt ttggittaga 420
 aatgtagggtc cagaatatat tgagtcagcc tttagatggg ctcatgaagc tgacccaaac 480
 gctcttctct tctataatga ttatgaagct gaggacttga atgataagtc gcatgctgtt 540
 tataacctgg ttaagagttt acttgagaaa ggtgtaccga tacatggcgt aggtattacag 600
 atgcatatta acgtagaaaa tccgccgaaa ccggaagatg ttgcagcaaa cattaacgt 660
 ctaaagtatc tgggcttgat tgtccacata acggaatgg atgtgcgcat tagaacccca 720
 ccatcaaatg aagatctcat taaacaagca gaaatttacc gtgatataat aagagtttgt 780
 ctttcatcag aaaaatgcac agcattcatt atgtggggat ttactgaccg ctattcatgg 840
 ataccaaatt acttcagcgg ctacggttca gctttaatat tcgatgagca atataagccc 900
 aaactagatt attactatat acttcggaca ttcatcgaaa aactaggcat taaagggtta 960

<210> 128
 <211> 319
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 128
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 1 5 10 15
 Pro Gly Tyr Leu Ile Ile Arg Glu Tyr Ala Glu Ile Leu Ser Arg Glu
 20 25 30
 Phe Asn Val Val Thr Ala Glu Asn Ala Leu Lys Phe Glu Ala Ile His
 35 40 45
 Pro Gln Arg Gly Val Tyr Ser Phe Glu Gly Ala Asp Ala Ile Val Arg
 50 55 60
 Phe Ala Glu Thr His Gly Met Lys Val Arg Gly His Thr Leu Val Trp
 65 70 75 80
 His Gln Gln Leu Pro Ala Trp Ile Thr Ser Gly Ser Tyr Ala Trp Glu
 85 90 95
 Glu Trp Lys Asn Ile Leu Arg Glu His Val Met Ser Val Val Gly Arg
 100 105 110
 Tyr Lys Gly Gln Ile Tyr Ala Trp Asp Val Val Asn Glu Ala Ile Leu
 115 120 125
 Asp Asn Gly Ser Leu Arg Asp Asn Val Trp Phe Arg Asn Val Gly Pro
 130 135 140
 Glu Tyr Ile Glu Ser Ala Phe Arg Trp Ala His Glu Ala Asp Pro Asn
 145 150 155 160
 Ala Leu Leu Phe Tyr Asn Asp Tyr Glu Ala Glu Asp Leu Asn Asp Lys
 165 170 175
 Ser His Ala Val Tyr Asn Leu Val Lys Ser Leu Leu Glu Lys Gly Val
 180 185 190
 Pro Ile His Gly Val Gly Leu Gln Met His Ile Asn Val Glu Asn Pro
 195 200 205
 Pro Lys Pro Glu Asp Val Ala Ala Asn Ile Lys Arg Leu Asn Asp Leu
 210 215 220
 Gly Leu Ile Val His Ile Thr Glu Met Asp Val Arg Ile Arg Thr Pro
 225 230 235 240
 Pro Ser Asn Glu Asp Leu Ile Lys Gln Ala Glu Ile Tyr Arg Asp Ile
 245 250 255
 Leu Arg Val Cys Leu Ser Ser Glu Lys Cys Thr Ala Phe Ile Met Trp
 260 265 270

Gly Phe Thr Asp Arg Tyr Ser Trp Ile Pro Asn Tyr Phe Ser Gly Tyr
 275 280 285
 Gly Ser Ala Leu Ile Phe Asp Glu Gln Tyr Lys Pro Lys Leu Ala Tyr
 290 295 300
 Tyr Tyr Ile Leu Arg Thr Phe Ile Glu Lys Leu Gly Ile Lys Gly
 305 310 315

<210> 129
 <211> 3021
 <212> DNA
 <213> Bacteria

<400> 129
 atggtaataa atcgctccag tgcgagtgac ggtgctgatt cggaaaaagg tttctatctc 60
 gacgggtggtg tagaatacaa gtacagtgtt tttgtaaaac acaacgggac cggcaccgaa 120
 actttcaaac tttctgtgtc ctatttggat tcggaaacag aagaagaaaa taaggaagta 180
 attgcaacaa aggatgttgt ggccggagaa tggactgaga tttcggcaaa atacaaagca 240
 cccaaaactg cagtgaatat tactttgtca attacaaccg acagcactgt agatttcatt 300
 tttgacgatg taaccataac ccgtaaagga atggctgagg caaacacagt atatgcagca 360
 aacgctgtgc tgaaagatat gtatgcaaac ttttcagag ttggttcggg acttaactcc 420
 ggaacggtaa acaattcatc aataaaggcc ttgattttta gagagttaa cagtattacc 480
 tgtgaaaatg aaatgaagcc tgatgccaca ctggttcaat caggatcaac caatacaaat 540
 atcagggttt ctcttaatcg tgcagcaagt attttaaact tctgtgcaca aaataatata 600
 gccgtcagag gtcatacact gggttggcac agccagacac ctcaatgggt tttcaaagac 660
 aatttccagg acaacggaaa ctgggtttcc caatcagtta tggaccagcg tttgaaagc 720
 tacataaaaa atatgtttgc tgaaatccaa agacagtatc cgtctttgaa tctttatgcc 780
 tatgacgttg taaatgaggc agtaagtgtat gatgcaaaac ggaccagata ttatggcggg 840
 gcgaggggaa ctggatcagg aaatggtaga tctccatggg ttcagatcta cggagacaac 900
 aaattttattg agaaagcatt tacatatgca agaaaatatg ctccggcaaa ttgtaagctt 960
 tactacaacg attacaacga atattgggat cataagagag actgtattgc ctcaatttgt 1020
 gcaaacttgt acaacaaggg ctgtgttgac ggtgtgggaa tgcagtccca tattaatgcg 1080
 gatatgaatg gattctcagg tatacaaat gatattagta ctttgagaa atataataat 1140
 atcggtttgt atgtccaaat taccgagctt gatattagta cagaaaacgg caaatttagc 1200
 ttacagcagc aggtgataa atataaagct gttttccagg cagctgttga tataaacaga 1260
 acctccagca aaggaaaggt tacggctgtc tgtgtatggg gacctaatga cgccaatact 1320
 tggctcgggt cacaaaatgc acctcttttg tttaacgcaa acaatcaacc gaaaccggca 1380
 tacaatgcgg ttgcatccat tattcctcag tccgaatggg gcgacggtaa caatccggcc 1440
 ggccggcggag gaggaggcaa accggaagag ccggatgcaa acggatatta ttatcatgac 1500
 acttttgaag gaagcgtagg acagtggaca gccagaggac ctgcggaagt tctgcttagc 1560
 ggaagaacgg cttacaaagg ttcagaatca ctcttggtta ggaaccgtac ggcagcatgg 1620
 aacggagcac aacgggcgct gaatcccaga acgtttgttc ccggaaacac atattgtttc 1680
 agcgtagtag catcggttat tgaaggtgag tcttccacaa cattctgcat gaagctgcaa 1740
 tacgtagacg gaagcggcac tcaacggtat gataccatag atatgaaaac tgtgggtcca 1800
 aatcagtgagg ttacactgta caatccgcaa tacagaattc cttccgatgc aacagatatg 1860
 tatgttttat tggaaacagc ggatgacacc attaaacttct acatagatga ggcaatcgga 1920
 gcggttgcgg gaactgtaat cgaaggacct gctccacagc ctacacagcc tccggtactg 1980
 cttggcgtatg taaacgggtga tggaaaccatt aactcaactg acttgacaat gttaaagaga 2040
 agcgtgttga gggcaatcac cttaccgac gatgcaaagg ctagagcaga cgttgacaag 2100
 aatggatcga taaacagcac tgatgtttta cttctttcac gctacctttt aagagtaatc 2160
 gacaaatttc ctgtagcaga aaatccttct tcttctttta aatatgagtc ggccgtgcaa 2220
 tatcgccggg ctctgattc ttatttaaac ctttgtccgc aggcgggaag aattgtcaag 2280
 gaaacatata caggaataaa cggaactaag agtcttaatg tataatcttc atacggttat 2340
 gatccgaaca aaaaatataa cattttctac cttatgcatg gcggcgggtga aaatgagaat 2400
 acgattttca gcaacgatgt taaattgcaa aatatccttg accacgcgat tatgaacggt 2460
 gaacttgagc ctttgattgt agtaacaccc actttcaacg gcggaaaactg cacggcccaa 2520
 aacttttatc aggaattcag gcaaaatgtc attccttttg tggaaagcaa gtactctact 2580
 tatgcagaat caacaacccc acaggaata gccgcttcaa gaatgcacag aggtttcggc 2640
 ggatttctca tgggaggatt gacaacatgg tatgtaatgg ttaactgcct tgattacgtt 2700
 gcatatttta tgcctttaag cggtgactac tggatgtgaa acagtccgca ggataaggct 2760
 aattcaattg ctgaagcaat taacagatcc ggactttcaa agagggagta tttcgtatgt 2820
 gcggccaccg gticcaggga tattgcatat gctaatatga atcctcaaat tgaagctatg 2880
 aaggctttgc cgcattttga ttatacttgc gatttttcca aaggtaattt ttactttctt 2940
 gtagctccgg gcgccactca ctggtgggga tacgtaagac attatattta tgatgcactt 3000
 ccatatttct tccatgaatg a 3021

<210> 130
 <211> 1006
 <212> PRT
 <213> Bacteria

<400> 130
 Met Val Ile Asn Arg Ser Ser Ala Ser Asp Gly Ala Tyr Ser Glu Lys
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 Gly Phe Tyr Leu Asp Gly Gly Val Glu Tyr Lys Tyr Ser Val Phe Val
 20 25 30
 Lys His Asn Gly Thr Gly Thr Glu Thr Phe Lys Leu Ser Val Ser Tyr
 35 40 45
 Leu Asp Ser Glu Thr Glu Glu Glu Asn Lys Glu Val Ile Ala Thr Lys
 50 55 60
 Asp Val Val Ala Gly Glu Trp Thr Glu Ile Ser Ala Lys Tyr Lys Ala
 65 70 75 80
 Pro Lys Thr Ala Val Asn Ile Thr Leu Ser Ile Thr Thr Asp Ser Thr
 85 90 95
 Val Asp Phe Ile Phe Asp Asp Val Thr Ile Thr Arg Lys Gly Met Ala
 100 105 110
 Glu Ala Asn Thr Val Tyr Ala Ala Asn Ala Val Leu Lys Asp Met Tyr
 115 120 125
 Ala Asn Tyr Phe Arg Val Gly Ser Val Leu Asn Ser Gly Thr Val Asn
 130 135 140
 Asn Ser Ser Ile Lys Ala Leu Ile Leu Arg Glu Phe Asn Ser Ile Thr
 145 150 155 160
 Cys Glu Asn Glu Met Lys Pro Asp Ala Thr Leu Val Gln Ser Gly Ser
 165 170 175
 Thr Asn Thr Asn Ile Arg Val Ser Leu Asn Arg Ala Ala Ser Ile Leu
 180 185 190
 Asn Phe Cys Ala Gln Asn Asn Ile Ala Val Arg Gly His Thr Leu Val
 195 200 205
 Trp His Ser Gln Thr Pro Gln Trp Phe Phe Lys Asp Asn Phe Gln Asp
 210 215 220
 Asn Gly Asn Trp Val Ser Gln Ser Val Met Asp Gln Arg Leu Glu Ser
 225 230 235 240
 Tyr Ile Lys Asn Met Phe Ala Glu Ile Gln Arg Gln Tyr Pro Ser Leu
 245 250 255
 Asn Leu Tyr Ala Tyr Asp Val Val Asn Glu Ala Val Ser Asp Asp Ala
 260 265 270
 Asn Arg Thr Arg Tyr Tyr Gly Gly Ala Arg Glu Pro Gly Tyr Gly Asn
 275 280 285
 Gly Arg Ser Pro Trp Val Gln Ile Tyr Gly Asp Asn Lys Phe Ile Glu
 290 295 300
 Lys Ala Phe Thr Tyr Ala Arg Lys Tyr Ala Pro Ala Asn Cys Lys Leu
 305 310 315 320
 Tyr Tyr Asn Asp Tyr Asn Glu Tyr Trp Asp His Lys Arg Asp Cys Ile
 325 330 335
 Ala Ser Ile Cys Ala Asn Leu Tyr Asn Lys Gly Leu Leu Asp Gly Val
 340 345 350
 Gly Met Gln Ser His Ile Asn Ala Asp Met Asn Gly Phe Ser Gly Ile
 355 360 365
 Gln Asn Tyr Lys Ala Ala Leu Gln Lys Tyr Ile Asn Ile Gly Cys Asp
 370 375 380
 Val Gln Ile Thr Glu Leu Asp Ile Ser Thr Glu Asn Gly Lys Phe Ser
 385 390 395 400
 Leu Gln Gln Gln Ala Asp Lys Tyr Lys Ala Val Phe Gln Ala Ala Val
 405 410 415
 Asp Ile Asn Arg Thr Ser Ser Lys Gly Lys Val Thr Ala Val Cys Val
 420 425 430
 Trp Gly Pro Asn Asp Ala Asn Thr Trp Leu Gly Ser Gln Asn Ala Pro
 435 440 445
 Leu Leu Phe Asn Ala Asn Asn Gln Pro Lys Pro Ala Tyr Asn Ala Val
 450 455 460
 Ala Ser Ile Ile Pro Gln Ser Glu Trp Gly Asp Gly Asn Asn Pro Ala
 465 470 475 480
 Gly Gly Gly Gly Gly Lys Pro Glu Glu Pro Asp Ala Asn Gly Tyr
 485 490 495
 Tyr Tyr His Asp Thr Phe Glu Gly Ser Val Gly Gln Trp Thr Ala Arg
 500 505 510
 Gly Pro Ala Glu Val Leu Leu Ser Gly Arg Thr Ala Tyr Lys Gly Ser
 515 520 525
 Glu ser Leu Leu Val Arg Asn Arg Thr Ala Ala Trp Asn Gly Ala Gln

530	Arg	Ala	Leu	Asn	Pro	535	Arg	Thr	Phe	Val	Pro	540	Gly	Asn	Thr	Tyr	Cys	Phe	
545	Ser	Val	Val	Ala	Ser	550	Phe	Ile	Glu	Gly	Ala	555	Ser	Ser	Thr	Thr	Phe	560	Cys
	Met	Lys	Leu	Gln	Tyr	565	Val	Asp	Gly	Ser	570	Gly	Thr	Gln	Arg	Tyr	575	Asp	Thr
	Ile	Asp	Met	Lys	Thr	580	Val	Gly	Pro	Asn	585	Gln	Trp	Val	His	Leu	590	Tyr	Asn
	Pro	Gln	Tyr	Arg	Ile	595	Pro	Ser	Asp	Ala	600	Thr	Asp	Met	Tyr	Val	605	Tyr	Val
	Glu	Thr	Ala	Asp	Asp	610	Thr	Ile	Asn	Phe	615	Tyr	Ile	Asp	Glu	Ala	620	Ile	Gly
625	Ala	Val	Ala	Gly	Thr	630	Val	Ile	Glu	Gly	635	Pro	Ala	Pro	Gln	Pro	640	Thr	Gln
	Pro	Pro	Val	Leu	Leu	645	Gly	Asp	Val	Asn	650	Gly	Asp	Gly	Thr	Ile	655	Asn	Ser
	Thr	Asp	Leu	Thr	Met	660	Leu	Lys	Arg	Ser	665	Val	Leu	Arg	Ala	Ile	670	Thr	Leu
	Thr	Asp	Asp	Ala	Lys	675	Ala	Arg	Ala	Asp	680	Val	Asp	Lys	Asn	Gly	685	Ser	Ile
	Asn	Ser	Thr	Asp	Val	690	Leu	Leu	Ser	Arg	695	Tyr	Leu	Leu	Arg	Val	700	Ile	Glu
705	Asp	Lys	Phe	Pro	Val	710	Ala	Glu	Asn	Pro	715	Ser	Ser	Phe	Lys	Tyr	720	Thr	Glu
	Ser	Ala	Val	Gln	Tyr	725	Arg	Pro	Ala	Pro	730	Asp	Ser	Tyr	Leu	Asn	735	Pro	Cys
	Pro	Gln	Ala	Gly	Arg	740	Ile	Val	Lys	Glu	745	Thr	Tyr	Thr	Gly	Ile	750	Asn	Gly
	Thr	Lys	Ser	Leu	Asn	755	Val	Tyr	Leu	Pro	760	Tyr	Gly	Tyr	Asp	Pro	765	Asn	Lys
	Lys	Tyr	Asn	Ile	Phe	770	Leu	Met	His	Gly	775	Gly	Gly	Glu	Asn	Glu	780	Asn	Asn
785	Thr	Ile	Phe	Ser	Asn	790	Asp	Val	Lys	Leu	795	Gln	Asn	Ile	Leu	Asp	800	His	Ala
	Ile	Met	Asn	Gly	Glu	805	Leu	Glu	Pro	Leu	810	Ile	Val	Val	Thr	Pro	815	Thr	Phe
	Asn	Gly	Gly	Asn	Cys	820	Thr	Ala	Gln	Asn	825	Phe	Tyr	Gln	Glu	Phe	830	Arg	Gln
	Asn	Val	Ile	Pro	Phe	835	Val	Glu	Ser	Lys	840	Tyr	Ser	Thr	Tyr	Ala	845	Glu	Ser
	Thr	Thr	Pro	Gln	Gly	850	Ile	Ala	Ala	Ser	855	Arg	Met	His	Arg	Gly	860	Phe	Gly
865	Gly	Phe	Ser	Met	Gly	870	Gly	Leu	Thr	Thr	875	Trp	Tyr	Val	Met	Val	880	Asn	Cys
	Leu	Asp	Tyr	Val	Ala	885	Tyr	Phe	Met	Pro	890	Leu	Ser	Gly	Asp	Tyr	895	Trp	Tyr
	Gly	Asn	Ser	Pro	Gln	900	Asp	Lys	Ala	Asn	905	Ser	Ile	Ala	Glu	Ala	910	Ile	Asn
	Arg	Ser	Gly	Leu	Ser	915	Lys	Arg	Glu	Tyr	920	Phe	Val	Phe	Ala	Ala	925	Thr	Gly
	Ser	Glu	Asp	Ile	Ala	930	Tyr	Ala	Asn	Met	935	Asn	Pro	Gln	Ile	Glu	940	Ala	Met
945	Lys	Ala	Leu	Pro	His	950	Phe	Asp	Tyr	Thr	955	Ser	Asp	Phe	Ser	Lys	960	Gly	Asn
	Phe	Tyr	Phe	Leu	Val	965	Ala	Pro	Gly	Ala	970	Thr	His	Trp	Trp	Gly	975	Tyr	Val
	Arg	His	Tyr	Ile	Tyr	980	Asp	Ala	Leu	Pro	985	Tyr	Phe	Phe	His	Glu	990		
						995				1000					1005				

<210> 131
 <211> 1218
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 131

atgccgatca	tccgaacctt	atcgagttac	atgcgaaatc	atcaagcgat	ctaccgtcag	60
ctcctcacgc	tggccgccgc	cgtcacgctg	gcgggcgcg	ccaccgcgga	ggaagaagcc	120
accctgcgcg	gggtttacga	aaaggacttc	accatcggcg	tggccatgaa	cgggggcccag	180
gcctccggcc	gcaatgccgc	cgccggcgag	atcatcgga	agcagttctc	ctcgctcacc	240
gcggagaacg	acatgaagtg	gcagatgatc	cacccccagg	agggtaata	ccgcttcgaa	300
acgtccgacg	cctacgtcgc	gttcgcggaa	aagcacaaga	tggaaagtc	cgccacacac	360
ctcgtgtggc	acagccagac	cccgcagtgg	gtcttcagg	gtgaaaacgg	ccagcccggc	420
accaaggaag	agctgctcaa	gcgcagtcgc	gaccacatcc	acgccgtggc	cggccgttac	480
aagggcaaga	tcaagggctg	ggacgtcgtc	aacgaagcgc	tctccgacgg	cggggacgac	540
attctccgcc	agtccccctg	gcgccgcac	atcggcgacg	acttcacga	ctacgccttc	600
cgctacgcca	aggaagccgc	cccggatgcc	gagctctact	acaacgacta	caacctcgag	660
atcccccgca	agcgcgcca	ttgcatcacg	ctggtcaagg	gcatgctcga	gcgcggcgctg	720
ccgatcgacg	gcacgcggac	ccagtcgcac	ttccagctcg	gctttccctc	cttggacgac	780
gtggaagcca	ccatcaagga	attcgcggcc	ctgggcatga	aggtgatgat	caccgagctc	840
gacgtggatg	tcctgccccg	caacaacccc	ggggtcgccg	acatcgccaa	ccgcgaacag	900
ggagccaacc	cctacaccga	aggccttccg	gacgacgtgc	aggaaaagct	cgcgaagcgc	960
tacgaggaca	tcttccgcat	ctacctgaag	taccgcgacc	acgtcaccgc	cgtcaccctc	1020
tggggcctgg	atgacggcat	gacctggctg	aacggcttcc	cgggtccgcg	ccgcaccaac	1080
caccccctgg	tctacaccg	gcagctcaat	gccaagcccg	ccttccacgc	cctcgtcaag	1140
ctgggtcagg	aagagcgctc	ggaagccgcc	aaggtcgagg	tccagaagat	cgaagcgaag	1200
aaagaagagg	cgaagtaa					1218

<210> 132

<211> 405

<212> PRT

<213> Unknown

<220>

<223> obtained from an environmental sample

<221> SIGNAL

<222> (1)...(26)

<400> 132

Met	Pro	Ile	Ile	Arg	Thr	Leu	Ser	Ser	Tyr	Met	Arg	Asn	His	Gln	Ala
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Ile	Tyr	Arg	Gln	Leu	Leu	Thr	Leu	Ala	Ala	Val	Thr	Leu	Ala	Gly	
			20					25				30			
Ala	Ala	Thr	Ala	Glu	Glu	Glu	Ala	Thr	Leu	Arg	Gly	Val	Tyr	Glu	Lys
		35					40				45				
Asp	Phe	Thr	Ile	Gly	Val	Ala	Met	Asn	Gly	Gly	Gln	Ala	Ser	Gly	Arg
	50					55					60				
Asn	Ala	Ala	Ala	Gly	Glu	Ile	Ile	Gly	Lys	Gln	Phe	Ser	Ser	Leu	Thr
65					70				75					80	
Ala	Glu	Asn	Asp	Met	Lys	Trp	Gln	Met	Ile	His	Pro	Gln	Glu	Gly	Gln
			85					90						95	
Tyr	Arg	Phe	Glu	Thr	Ser	Asp	Ala	Tyr	Val	Ala	Phe	Ala	Glu	Lys	His
			100					105					110		
Lys	Met	Glu	Val	Ile	Gly	His	Thr	Leu	Val	Trp	His	Ser	Gln	Thr	Pro
		115					120					125			
Gln	Trp	Val	Phe	Gln	Gly	Glu	Asn	Gly	Gln	Pro	Ala	Thr	Lys	Glu	Glu
	130					135					140				
Leu	Leu	Lys	Arg	Met	Arg	Asp	His	Ile	His	Ala	Val	Ala	Gly	Arg	Tyr
145					150					155				160	
Lys	Gly	Lys	Ile	Lys	Gly	Trp	Asp	Val	Val	Asn	Glu	Ala	Leu	Ser	Asp
				165					170					175	
Gly	Gly	Asp	Asp	Ile	Leu	Arg	Gln	Ser	Pro	Trp	Arg	Arg	Ile	Ile	Gly
			180					185					190		
Asp	Asp	Phe	Ile	Asp	Tyr	Ala	Phe	Arg	Tyr	Ala	Lys	Glu	Ala	Ala	Pro
		195					200					205			
Asp	Ala	Glu	Leu	Tyr	Tyr	Asn	Asp	Tyr	Asn	Leu	Glu	Ile	Pro	Arg	Lys
	210					215					220				
Arg	Ala	Asn	Cys	Ile	Thr	Leu	Val	Lys	Gly	Met	Leu	Glu	Arg	Gly	Val
225					230					235				240	
Pro	Ile	Asp	Gly	Ile	Gly	Thr	Gln	Ser	His	Phe	Gln	Leu	Gly	Phe	Pro
				245					250					255	
Ser	Leu	Asp	Asp	Val	Glu	Ala	Thr	Ile	Lys	Glu	Phe	Ala	Ala	Leu	Gly
		260					265					270			
Met	Lys	Val	Met	Ile	Thr	Glu	Leu	Asp	Val	Asp	Val	Leu	Pro	Arg	Asn

Asn	Pro	Gly	Val	Ala	Asp	Ile	Ala	Asn	Arg	Glu	Gln	Gly	Ala	Asn	Pro
275	290				295						300				
Tyr	Thr	Glu	Gly	Leu	Pro	Asp	Asp	Val	Gln	Glu	Lys	Leu	Ala	Lys	Arg
305					310					315					320
Tyr	Glu	Asp	Ile	Phe	Arg	Ile	Tyr	Leu	Lys	Tyr	Arg	Asp	His	Val	Thr
			325						330					335	
Arg	Val	Thr	Phe	Trp	Gly	Leu	Asp	Asp	Gly	Met	Thr	Trp	Leu	Asn	Gly
			340					345					350		
Phe	Pro	Val	Arg	Gly	Arg	Thr	Asn	His	Pro	Leu	Leu	Tyr	Asp	Arg	Gln
		355					360					365			
Leu	Asn	Ala	Lys	Pro	Ala	Phe	His	Ala	Leu	Val	Lys	Leu	Gly	Gln	Glu
	370					375					380				
Glu	Arg	Pro	Glu	Ala	Ala	Lys	Val	Glu	Val	Gln	Lys	Ile	Glu	Ala	Lys
385					390					395					400
Lys	Glu	Glu	Ala	Lys											
				405											

<210> 133
 <211> 1011
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 133

atgaaaaata	atcaatttag	gaaaatccct	tccctacata	aggtatataa	gagtcatttt	60
ttaattgggg	cagctgtaaa	tccacttaca	cttcaaacac	aacaggaact	aatcaaaaag	120
cactttaata	gtattacggc	agaaaatgaa	atgaaatttg	aagagttgca	acctgagcct	180
ggacatttta	catttgatgt	aggagataaa	atgggtcgctt	tcgcaaaaaga	aaatgggatg	240
aaagttagag	gtcatacatt	aatctggcac	aatcaaacac	ctgattggat	gtttaagaat	300
gaagatgggt	ctgtcacaga	tcgagataca	cttcttgaaa	gaatgaaatt	acatattaca	360
actgttatgg	agcattataa	ggggcaaatt	tattgttggg	atgttgtcaa	tgaagcgatt	420
gctgatgaag	gatcagagtt	attacgtcac	tctaaatgga	ctgaaattat	tggcgacgat	480
tttattgaaa	aggcatttga	gtatgcacat	gaagcagacc	cagaagcttt	actattctat	540
aatgactata	atgagtccca	ccctcataag	cgagataaaa	tttacacact	aataaaaaga	600
ttggtagaca	aaggcatacc	tattcacggg	gttggcttgc	aagcacattg	gaatttaaca	660
gacccttctt	atgaggagat	tagggctgca	attgaaaaat	atgcctcatt	aggcttggaa	720
atacatctta	cagaaatgga	tgtttcagtg	ttcaattttg	aagatcgaag	aacagactta	780
acagagccga	ctaatagaat	gaagactctt	caagtagaac	gttatacggg	atTTTTTcaa	840
atacttagag	aatatagcca	tgtgattagc	tctgtcactt	tttggggagc	tgcagatgat	900
tatacttggt	tggatgggtt	tccagttaga	ggaaggaaaa	actggccatt	tgTTTTTgac	960
gaaaaccacc	aaccgaaaga	atctttctcg	ggaattgtcg	attttgaata	a	1011

<210> 134
 <211> 336
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 134

Met	Lys	Asn	Asn	Gln	Phe	Arg	Lys	Ile	Pro	Ser	Leu	His	Lys	Val	Tyr
1			5						10					15	
Lys	Ser	His	Phe	Leu	Ile	Gly	Ala	Ala	Val	Asn	Pro	Leu	Thr	Leu	Gln
			20				25						30		
Thr	Gln	Gln	Glu	Leu	Ile	Lys	Lys	His	Phe	Asn	Ser	Ile	Thr	Ala	Glu
		35				40						45			
Asn	Glu	Met	Lys	Phe	Glu	Glu	Leu	Gln	Pro	Glu	Pro	Gly	His	Phe	Thr
	50				55					60					
Phe	Asp	Val	Gly	Asp	Lys	Met	Val	Ala	Phe	Ala	Lys	Glu	Asn	Gly	Met
65				70					75					80	
Lys	Val	Arg	Gly	His	Thr	Leu	Ile	Trp	His	Asn	Gln	Thr	Pro	Asp	Trp
			85					90					95		
Met	Phe	Lys	Asn	Glu	Asp	Gly	Ser	Val	Thr	Asp	Arg	Asp	Thr	Leu	Leu
			100				105						110		
Glu	Arg	Met	Lys	Leu	His	Ile	Thr	Thr	Val	Met	Glu	His	Tyr	Lys	Gly

Gln	Ile	Tyr	Cys	Trp	Asp	Val	Val	Asn	Glu	Ala	Ile	Ala	Asp	Glu	Gly
115	130					135					140				
Ser	Glu	Leu	Leu	Arg	His	Ser	Lys	Trp	Thr	Glu	Ile	Ile	Gly	Asp	Asp
145					150					155					160
Phe	Ile	Glu	Lys	Ala	Phe	Glu	Tyr	Ala	His	Glu	Ala	Asp	Pro	Glu	Ala
				165					170					175	
Leu	Leu	Phe	Tyr	Asn	Asp	Tyr	Asn	Glu	Ser	His	Pro	His	Lys	Arg	Asp
			180					185					190		
Lys	Ile	Tyr	Thr	Leu	Ile	Lys	Arg	Leu	Val	Asp	Lys	Gly	Ile	Pro	Ile
		195					200					205			
His	Gly	Val	Gly	Leu	Gln	Ala	His	Trp	Asn	Leu	Thr	Asp	Pro	Ser	Tyr
	210				215						220				
Glu	Glu	Ile	Arg	Ala	Ala	Ile	Glu	Lys	Tyr	Ala	Ser	Leu	Gly	Leu	Glu
225				230						235					240
Ile	His	Leu	Thr	Glu	Met	Asp	Val	Ser	Val	Phe	Asn	Phe	Glu	Asp	Arg
				245				250						255	
Arg	Thr	Asp	Leu	Thr	Glu	Pro	Thr	Asn	Glu	Met	Lys	Thr	Leu	Gln	Val
			260					265					270		
Glu	Arg	Tyr	Thr	Glu	Phe	Phe	Lys	Ile	Leu	Arg	Glu	Tyr	Ser	His	Val
		275					280					285			
Ile	Ser	Val	Thr	Phe	Trp	Gly	Ala	Ala	Asp	Asp	Tyr	Thr	Trp	Leu	
	290				295					300					
Asp	Gly	Phe	Pro	Val	Arg	Gly	Arg	Lys	Asn	Trp	Pro	Phe	Val	Phe	Asp
305					310					315					320
Glu	Asn	His	Gln	Pro	Lys	Glu	Ser	Phe	Trp	Gly	Ile	Val	Asp	Phe	Glu
			325						330					335	

<210> 135
 <211> 1170
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 135							
atgcgacgcc	tcatcgccct	tgtcctatat	ataggaaccg	ccgcgagcgg	gacctccgtg		60
gagaccgttg	cggccgaatc	gaaacagccg	aaagctagcc	taaagaatgc	gttcgcagac		120
gattttcgtg	tcggcgctgc	aattggcacc	aatcagggtca	tgggcgagga	gccaaaatcg		180
ctcgagggtg	tcgcccagca	gttcaacaca	atcacgcctg	agaatctcct	caaatgggct		240
gaggtccacc	cagaagcaga	ccgctacaac	ttcgaaccgt	ccgatcgctt	cgtcgaattt		300
ggcgaaaaga	acaacatggt	catcgctcgc	cacacgctcg	tgtggcataa	ccaaacgccg		360
gactgggcct	ttgagggcaa	ggacggcaag	ccgctcgcgc	gcgaaacagc	gctcgcccga		420
atcaaggaac	acattgaaac	cgtggctcgc	cgatatacgc	gccgcatcca	tgcttgggac		480
gtcgtgaacg	aggcaatcga	cgacaacggc	aaacttcgta	gtgggcccgt	cggagtgcgc		540
gggtcagcgc	gcgaaccgtg	gcacgccgcc	atcggagacg	actacatcca	gaaggcggtc		600
gaattcgcgc	acaccgccga	ccccgacgct	gaactctatt	acaacgacta	caacgaatgg		660
cacccgaaaa	agatcgaagc	catctcgcag	ctggtgcggt	cgctcaaaga	gaaggcggtt		720
cgtatcgatg	gcctcgggtc	ccagggccat	tgggggatgg	attacccgaa	agtcgaagag		780
atcgatcaca	tgctaaccga	gtatggcaag	ctcggcggtg	agctcatgat	taccgaactc		840
gacatcaaca	tgcttccgca	gcccgaaccg	agtcaacgcg	gcgccgatat	cactcgcaac		900
tacgagctca	gaaaggagct	cgatccgtat	tccgacggac	tcccgcccca	tatgcaaaag		960
gcactcgcgc	cgcggttatg	tgaaatcttc	gaagtcttcg	ctaagcatcg	cgataagctc		1020
gaccgcgtca	cattttgggg	cgttcacgac	ggccattcat	ggctcaacaa	ctggcctggt		1080
cccggctcga	ctgcctaccc	gcttctcttc	gacacgaagc	ttcagcccaa	gccggcattt		1140
gatgccgtca	tcggagtcgc	agagcaatga					1170

<210> 136
 <211> 389
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(25)

<400> 136

Met Arg Arg Leu Ile Ala Leu Val Leu Tyr Ile Gly Thr Ala Ala Ser
 1 5 10 15
 Gly Thr Ser Val Glu Thr Val Ala Ala Glu Ser Lys Gln Pro Lys Ala
 20 25 30
 Ser Leu Lys Asn Ala Phe Ala Asp Asp Phe Arg Val Gly Ala Ala Ile
 35 40 45
 Gly Thr Asn Gln Val Met Gly Glu Glu Pro Lys Ser Leu Glu Val Val
 50 55 60
 Ala Gln Gln Phe Asn Thr Ile Thr Pro Glu Asn Leu Leu Lys Trp Ala
 65 70 75 80
 Glu Val His Pro Glu Ala Asp Arg Tyr Asn Phe Glu Pro Ser Asp Arg
 85 90 95
 Phe Val Glu Phe Gly Glu Lys Asn Asn Met Phe Ile Val Gly His Thr
 100 105 110
 Leu Val Trp His Asn Gln Thr Pro Asp Trp Ala Phe Glu Gly Lys Asp
 115 120 125
 Gly Lys Pro Leu Asp Arg Glu Thr Ala Leu Ala Arg Ile Lys Glu His
 130 135 140
 Ile Glu Thr Val Val Gly Arg Tyr Arg Gly Arg Ile His Ala Trp Asp
 145 150 155 160
 Val Val Asn Glu Ala Ile Asp Asp Asn Gly Lys Leu Arg Ser Gly Pro
 165 170 175
 Val Gly Val Pro Gly Gln Arg Gly Glu Pro Trp His Ala Ala Ile Gly
 180 185 190
 Asp Asp Tyr Ile Gln Lys Ala Phe Glu Phe Ala His Thr Ala Asp Pro
 195 200 205
 Asp Ala Glu Leu Tyr Tyr Asn Asp Tyr Asn Glu Trp His Pro Lys Lys
 210 215 220
 Ile Glu Ala Ile Ser Gln Leu Val Arg Ser Leu Lys Glu Lys Gly Val
 225 230 235 240
 Arg Ile Asp Gly Leu Gly Leu Gln Gly His Trp Gly Met Asp Tyr Pro
 245 250 255
 Lys Val Glu Glu Ile Asp His Met Leu Thr Glu Tyr Gly Lys Leu Gly
 260 265 270
 Val Lys Leu Met Ile Thr Glu Leu Asp Ile Asn Met Leu Pro Gln Pro
 275 280 285
 Asp Pro Ser Gln Arg Gly Ala Asp Ile Thr Arg Asn Tyr Glu Leu Arg
 290 295 300
 Lys Glu Leu Asp Pro Tyr Ser Asp Gly Leu Pro Pro Asp Met Gln Lys
 305 310 315 320
 Ala Leu Ala Ala Arg Tyr Ala Glu Ile Phe Glu Val Phe Ala Lys His
 325 330 335
 Arg Asp Lys Leu Asp Arg Val Thr Phe Trp Gly Val His Asp Gly His
 340 345 350
 Ser Trp Leu Asn Asn Trp Pro Val Pro Gly Arg Thr Ala Tyr Pro Leu
 355 360 365
 Leu Phe Asp Thr Lys Leu Gln Pro Lys Pro Ala Phe Asp Ala Val Ile
 370 375 380
 Gly Val Ala Glu Gln
 385

<210> 137

<211> 1044

<212> DNA

<213> Unknown

<220>

<223> obtained from an environmental sample

<400> 137

gtggatcctt	cgctgaagga	agcagcttcg	ggcaagtttc	tgatgggggt	agcgttgaat	60
gtacgtcagg	cagcaggcca	ggatacttgc	gcctcgaaag	tggtaaaacg	tcattttaat	120
tcatttgtgg	ccgagaattg	catgaaatgc	gaagtgtattc	atccggagga	agaccatttt	180
gattttacgg	aagcggaccg	gttggttcgt	tttgccgagg	agaacgatat	ggctgttatc	240
gggcattgcc	ttatctggca	ttcacagctg	gcaccttggt	tctgtgtgga	caaacaagga	300
aaaacagtaa	gtgccgacat	cttgaaggag	cgtataaaaa	aacatatcca	gactattgtg	360
acgcactata	aagggcgtat	aaagggtcgg	gatgtgttga	atgaagccat	tgaatcggac	420
ggctcctggc	gtaaatctcc	ttttacgag	atattaggcg	aagagtacat	cccgcttatt	480

tttcagtatg	ctcatgaggc	agatccggaa	gccgaacttt	actataatga	ttatggcatg	540
gacgggaagg	ctaagcgtga	caaagtagtc	gaattggtaa	agatgctgaa	agatcgtgga	600
ctgcgcatcg	acgcggtagg	tatgcaggga	cacatgggaa	tggtattatcc	gtcagtgtcc	660
gaatttgaag	ccagtatact	ggcatttgca	gctgccggag	taaagggtgat	ggtaaccgaa	720
tgggatatga	gtgcattgcc	cacgacacgg	atgggagcca	atatttcgga	cacgggtgtct	780
tataaacaat	ccctgaatcc	ctatcccgcg	ggtttgcccg	actctgtgtc	tgtggcatgg	840
aataaccgga	tgaaggaatt	tttcgggtctt	ttcctgaaac	attcgaatat	cattacccgt	900
gtgacggcgt	gggggggtgac	ggacgggtgac	tcatggaaga	ataatttccc	tgtgcccgga	960
cgtgtggatt	atcctttatt	gttcgaccgt	gattgccggc	cgaaccttt	tgtggaagaa	1020
ctgattggaa	aacagaacat	ttaa				1044

<210> 138

<211> 347

<212> PRT

<213> Unknown

<220>

<223> obtained from an environmental sample

<400> 138

Val	Asp	Pro	Ser	Leu	Lys	Glu	Ala	Ala	Ser	Gly	Lys	Phe	Leu	Met	Gly
1				5					10					15	
Val	Ala	Leu	Asn	Val	Arg	Gln	Ala	Ala	Gly	Gln	Asp	Thr	Cys	Ala	Ser
			20					25					30		
Lys	Val	Val	Lys	Arg	His	Phe	Asn	Ser	Ile	Val	Ala	Glu	Asn	Cys	Met
		35					40					45			
Lys	Cys	Glu	Val	Ile	His	Pro	Glu	Glu	Asp	His	Phe	Asp	Phe	Thr	Glu
	50					55				60					
Ala	Asp	Arg	Leu	Val	Arg	Phe	Gly	Glu	Glu	Asn	Asp	Met	Ala	Val	Ile
65					70					75					80
Gly	His	Cys	Leu	Ile	Trp	His	Ser	Gln	Leu	Ala	Pro	Trp	Phe	Cys	Val
			85						90					95	
Asp	Lys	Gln	Gly	Lys	Thr	Val	Ser	Ala	Asp	Ile	Leu	Lys	Glu	Arg	Ile
			100					105					110		
Lys	Lys	His	Ile	Gln	Thr	Ile	Val	Thr	His	Tyr	Lys	Gly	Arg	Ile	Lys
		115					120					125			
Gly	Trp	Asp	Val	Leu	Asn	Glu	Ala	Ile	Glu	Ser	Asp	Gly	Ser	Trp	Arg
	130					135					140				
Lys	Ser	Pro	Phe	Tyr	Glu	Ile	Leu	Gly	Glu	Glu	Tyr	Ile	Pro	Leu	Ile
145					150					155					160
Phe	Gln	Tyr	Ala	His	Glu	Ala	Asp	Pro	Glu	Ala	Glu	Leu	Tyr	Tyr	Asn
			165					170						175	
Asp	Tyr	Gly	Met	Asp	Gly	Lys	Ala	Lys	Arg	Asp	Lys	Val	Val	Glu	Leu
			180					185					190		
Val	Lys	Met	Leu	Lys	Asp	Arg	Gly	Leu	Arg	Ile	Asp	Ala	Val	Gly	Met
		195					200					205			
Gln	Gly	His	Met	Gly	Met	Asp	Tyr	Pro	Ser	Val	Ser	Glu	Phe	Glu	Ala
	210					215					220				
Ser	Ile	Leu	Ala	Phe	Ala	Ala	Ala	Gly	Val	Lys	Val	Met	Val	Thr	Glu
225					230					235					240
Trp	Asp	Met	Ser	Ala	Leu	Pro	Thr	Thr	Arg	Met	Gly	Ala	Asn	Ile	Ser
			245					250						255	
Asp	Thr	Val	Ser	Tyr	Lys	Gln	Ser	Leu	Asn	Pro	Tyr	Pro	Asp	Gly	Leu
			260					265					270		
Pro	Asp	Ser	Val	Ser	Val	Ala	Trp	Asn	Arg	Met	Lys	Glu	Phe	Phe	
		275					280				285				
Gly	Leu	Phe	Leu	Lys	His	Ser	Asn	Ile	Ile	Thr	Arg	Val	Thr	Ala	Trp
	290					295					300				
Gly	Val	Thr	Asp	Gly	Asp	Ser	Trp	Lys	Asn	Asn	Phe	Pro	Val	Pro	Gly
305					310					315					320
Arg	Val	Asp	Tyr	Pro	Leu	Leu	Phe	Asp	Arg	Asp	Cys	Arg	Pro	Lys	Pro
			325					330						335	
Phe	Val	Glu	Glu	Leu	Ile	Gly	Lys	Gln	Asn	Ile					
			340					345							

<210> 139

<211> 1143

<212> DNA

<213> Unknown

<220>

<223> obtained from an environmental sample

<400> 139

atgaaaaaaa	cgattgcaca	tttcacctta	tggatagtgt	tttttctctt	cacttcctgt	60
actgttacgg	cgcagaagaa	tgctaagaat	gcaagagtaa	aaccctactac	cctaaaagag	120
gcttaccaaag	gtaaattcta	tatcggtact	gcgatgaact	tgagacagat	tcacggagat	180
gatccccaat	ctgaaaaatat	tatcaaaaaa	cagttcaatt	ccatagtgtg	cgaaaactgc	240
atgaagagta	tgtatcttca	gccggaggaa	ggaaaatttt	tcttcgatga	tgcggaacaag	300
tttgtggatt	ttgggtcttca	gaacaatatg	ttcattatcg	ggcattgtct	gatttggcat	360
tgcgaggcgc	caaaatgggt	tttcaccgac	gaaaatggaa	acacgggttc	tccagaagtt	420
cttaaacaaa	ggatgaaagc	ccatatcacc	gctgtcgttt	cccgtacaa	agggaaaatc	480
aaagggtggg	atgtggtgaa	cgaagccatt	atggaagatg	gttcttaccg	caaaagcaaa	540
ttttacgaga	ttttgggaga	agaatttatt	ccgttggcat	ttcagtatgc	gcatgaagca	600
gaccttgatg	cagaacttta	ttacaacgat	tataacgaat	ggtatcccgg	gaaaagagct	660
atggtgacca	aaataatccg	cgatttcaaa	actagaggaa	tccgcatcga	tgccatcgga	720
atgcaggctc	atttcgggat	ggatttcgcc	actgtagaag	agtatgaaca	aactattcag	780
ggctatatata	aagaaggcgt	gaaagtcatt	attacggaac	tcgattttaag	tccgcttcct	840
tctccttggg	gaacttccgc	caacgttgct	gatacgcagc	agtatcagga	aaaaatgaat	900
ccttacacca	aaggacttcc	tgctgatgta	gaaaaagcat	gggaaaaccg	ttatctcgat	960
tttttcaaac	ttttcctaaa	atatcatcag	cattattgagc	gtgtaacttt	ttggggagtg	1020
agcgataatcg	attcctggaa	aaacgatttt	ccgataagag	gacgtaccga	ttatccacta	1080
ccgtttaacc	gtcaatatca	ggcaaaacct	ttggttcaga	aattaataga	cttaacgaaa	1140
tag						1143

<210> 140

<211> 380

<212> PRT

<213> Unknown

<220>

<223> obtained from an environmental sample

<221> SIGNAL

<222> (1)...(24)

<400> 140

Met	Lys	Lys	Thr	Ile	Ala	His	Phe	Thr	Leu	Trp	Ile	Val	Phe	Phe	Leu
1				5					10					15	
Phe	Thr	Ser	Cys	Thr	Val	Thr	Ala	Gln	Lys	Asn	Ala	Lys	Asn	Ala	Arg
			20					25					30		
Val	Lys	Pro	Thr	Thr	Leu	Lys	Glu	Ala	Tyr	Gln	Gly	Lys	Phe	Tyr	Ile
		35					40					45			
Gly	Thr	Ala	Met	Asn	Leu	Arg	Gln	Ile	His	Gly	Asp	Asp	Pro	Gln	Ser
	50					55					60				
Glu	Asn	Ile	Ile	Lys	Lys	Gln	Phe	Asn	Ser	Ile	Val	Ala	Glu	Asn	Cys
65					70				75					80	
Met	Lys	Ser	Met	Tyr	Leu	Gln	Pro	Glu	Glu	Gly	Lys	Phe	Phe	Phe	Asp
				85				90						95	
Asp	Ala	Asp	Lys	Phe	Val	Asp	Phe	Gly	Leu	Gln	Asn	Asn	Met	Phe	Ile
			100					105					110		
Ile	Gly	His	Cys	Leu	Ile	Trp	His	Ser	Gln	Ala	Pro	Lys	Trp	Phe	Phe
		115					120					125			
Thr	Asp	Glu	Asn	Gly	Asn	Thr	Val	Ser	Pro	Glu	Val	Leu	Lys	Gln	Arg
	130					135					140				
Met	Lys	Ala	His	Ile	Thr	Ala	Val	Val	Ser	Arg	Tyr	Lys	Gly	Lys	Ile
145					150					155				160	
Lys	Gly	Trp	Asp	Val	Val	Asn	Glu	Ala	Ile	Met	Glu	Asp	Gly	Ser	Tyr
				165					170					175	
Arg	Lys	Ser	Lys	Phe	Tyr	Glu	Ile	Leu	Gly	Glu	Glu	Phe	Ile	Pro	Leu
			180					185					190		
Ala	Phe	Gln	Tyr	Ala	His	Glu	Ala	Asp	Pro	Asp	Ala	Glu	Leu	Tyr	Tyr
		195					200					205			
Asn	Asp	Tyr	Asn	Glu	Trp	Tyr	Pro	Gly	Lys	Arg	Ala	Met	Val	Thr	Lys
	210					215					220				
Ile	Ile	Arg	Asp	Phe	Lys	Thr	Arg	Gly	Ile	Arg	Ile	Asp	Ala	Ile	Gly
225					230					235				240	
Met	Gln	Ala	His	Phe	Gly	Met	Asp	Ser	Pro	Thr	Val	Glu	Glu	Tyr	Glu

245 250 255
 Gln Thr Ile Gln Gly Tyr Ile Lys Glu Gly Val Lys Val Asn Ile Thr
 260 265 270
 Glu Leu Asp Leu Ser Pro Leu Pro Ser Pro Trp Gly Thr Ser Ala Asn
 275 280 285
 Val Ala Asp Thr Gln Gln Tyr Gln Glu Lys Met Asn Pro Tyr Thr Lys
 290 295 300
 Gly Leu Pro Val Asp Val Glu Lys Ala Trp Glu Asn Arg Tyr Leu Asp
 305 310 315 320
 Phe Phe Lys Leu Phe Leu Lys Tyr His Gln His Ile Glu Arg Val Thr
 325 330 335
 Phe Trp Gly Val Ser Asp Ile Asp Ser Trp Lys Asn Asp Phe Pro Ile
 340 345 350
 Arg Gly Arg Thr Asp Tyr Pro Leu Pro Phe Asn Arg Gln Tyr Gln Ala
 355 360 365
 Lys Pro Leu Val Gln Lys Leu Ile Asp Leu Thr Lys
 370 375 380

<210> 141
 <211> 1134
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 141
 atgaatatct caccgcagaca actactggcg ctcacgggtg ctacggcggc gatcacagca 60
 gccaaattac aggcggcaga aaaagccagc gccgcgaccg gcttgcgcg tgcctacaaa 120
 aatgattttt tgattggcgc tgcgctgagt gcatcgatca ttcaacagca agatccacag 180
 ctagttgcac tgattaataa agactttaat tccatcaccc cagaaaactg tatgaaatgg 240
 ggcgagatgc gcaatgatga cggcagctgg aagtggcagg atgcagacgc atttgtcgag 300
 tatggaagca aatacaaaact acatatggctc ggccacacat tgggggtggca cagccagatt 360
 cccgatagcg tgtttaaaaa taaagacggt agctatatatt ccaaaaccga actcgcgaaa 420
 aaacaaaaag aacacatcac cactattggt ggccgctaca aaggcaaaact tgccgcgtgg 480
 gatgtggtga atgaagctgt cggcgaatgc aacaaaatgc gcgatagtca ctggtataaa 540
 atcatggggc atgattttct cgtaaagca tttaaccttg ctcatgaagt agatccgaag 600
 gcgcatctga tgtacaacga ctacaacaac gagcgcccg aaaaacgcca ggcgactatc 660
 gatatgatca agcgtctgca acaacgcggt acaccaatcc atgggttggg catgcaagcg 720
 catatcggat tggaaccac tatgcaggat tttgaagata gtattctcgc ctattcagca 780
 ttgggtttta aaatccatct caccgaacta gatataatg tgctgccctc tgtatggaat 840
 ttaccgggtg cgaagatttc taccgcgttt gaatacaagc cggaacgcga tccttataca 900
 aaaggtttgc cgaaagagat tgatgaaaaa cttgcaaaaag cctatgaatc gctattttaa 960
 atattgctta aacatcgcg caaaatagat agagttacgt tttggggcgt aagcgatgat 1020
 gccagctggc tcaatgattt cccaatcaat ggcagaacca actatccgtt attgtttaac 1080
 cgtcaacgcc aacctaaagc tgcttatttc cgtttgctgg atttaaaacg ctag 1134

<210> 142
 <211> 377
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(25)

<400> 142
 Met Asn Ile Ser Arg Arg Gln Leu Leu Ala Leu Thr Gly Ala Thr Ala
 1 5 10 15
 Ala Ile Thr Ala Ala Lys Leu Gln Ala Ala Glu Lys Ala Ser Ala Ala
 20 25 30
 Thr Gly Leu Arg Asp Ala Tyr Lys Asn Asp Phe Leu Ile Gly Ala Ala
 35 40 45
 Leu Ser Ala Ser Ile Ile Gln Gln Gln Asp Pro Gln Leu Val Ala Leu
 50 55 60
 Ile Asn Lys Asp Phe Asn Ser Ile Thr Pro Glu Asn Cys Met Lys Trp
 65 70 75 80

Gly Glu Met Arg Asn Asp Asp Gly Ser Trp Lys Trp Gln Asp Ala Asp
 85 90 95
 Ala Phe Val Glu Tyr Gly Ser Lys Tyr Lys Leu His Met Val Gly His
 100 105 110
 Thr Leu Gly Trp His Ser Gln Ile Pro Asp Ser Val Phe Lys Asn Lys
 115 120 125
 Asp Gly Ser Tyr Ile Ser Lys Thr Glu Leu Ala Lys Lys Gln Lys Glu
 130 135 140
 His Ile Thr Thr Ile Val Gly Arg Tyr Lys Gly Lys Leu Ala Ala Trp
 145 150 155 160
 Asp Val Val Asn Glu Ala Val Gly Asp Asp Asn Lys Met Arg Asp Ser
 165 170 175
 His Trp Tyr Lys Ile Met Gly Asp Asp Phe Leu Val Asn Ala Phe Asn
 180 185 190
 Leu Ala His Glu Val Asp Pro Lys Ala His Leu Met Tyr Asn Asp Tyr
 195 200 205
 Asn Asn Glu Arg Pro Glu Lys Arg Gln Ala Thr Ile Asp Met Ile Lys
 210 215 220
 Arg Leu Gln Gln Arg Gly Thr Pro Ile His Gly Leu Gly Met Gln Ala
 225 230 235 240
 His Ile Gly Leu Glu Thr Asn Met Gln Asp Phe Glu Asp Ser Ile Leu
 245 250 255
 Ala Tyr Ser Ala Leu Gly Leu Lys Ile His Leu Thr Glu Leu Asp Ile
 260 265 270
 Asp Val Leu Pro Ser Val Trp Asn Leu Pro Val Ala Glu Ile Ser Thr
 275 280 285
 Arg Phe Glu Tyr Lys Pro Glu Arg Asp Pro Tyr Thr Lys Gly Leu Pro
 290 295 300
 Lys Glu Ile Asp Glu Lys Leu Ala Lys Ala Tyr Glu Ser Leu Phe Lys
 305 310 315 320
 Ile Leu Leu Lys His Arg Asp Lys Ile Asp Arg Val Thr Phe Trp Gly
 325 330 335
 Val Ser Asp Asp Ala Ser Trp Leu Asn Asp Phe Pro Ile Asn Gly Arg
 340 345 350
 Thr Asn Tyr Pro Leu Leu Phe Asn Arg Gln Arg Gln Pro Lys Ala Ala
 355 360 365
 Tyr Phe Arg Leu Leu Asp Leu Lys Arg
 370 375

<210> 143

<211> 3285

<212> DNA

<213> Bacteria

<400> 143

atgagtttaa	aaataaataa	aatcatatca	tttatcatag	ttttttcgat	ggtttttggg	60
acgttaatgt	atgtgccaca	tctaaaagca	tttgcgata	ataccggtat	taatttgggt	120
tctaattggtg	atittgaatc	aggcacaatt	gatggctggt	ttaaacaagg	taatccgaca	180
ttacagtaa	caactgagca	ggcaattggg	caatacagta	tgaaagttac	aggtagaaca	240
cagacatatg	aaggacccgc	atatagcttt	ttggggaaaa	tcagaaaagg	tgaatcatat	300
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<211> 1094

<212> PRT

<213> Bacteria

<220>

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 Glu Val Asn Arg Glu Asp Val Gln Val Lys Lys Phe Val Gly Pro Gly
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 Phe Lys Lys Asp Ser Tyr Ile Gly Phe Asp Ala Ala Val Ile Asp Asp
 485 490 495
 Gly Lys Trp Tyr Ser Trp Ser Asp Thr Asn Ser Gln Lys Thr Asn
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 aacattattg ggcccagagt tatggagcac gccttcaatt acgcccacga agtggacccc 600
 gacgctcacc tgttgtacaa cgactacaat atgcacggtc gggaaaaacg cgaattcgtc 660
 ctggatttca tcaaaaagata caagaaaaaa ggcattccga tccagggcat aggcatgcaa 720
 ggccatgtgg gcctgagctt tcccgatatc agcgagtttg agaaaagcct gcaagcctac 780
 gccaaacagg gcatgcggat gcacattacc gagctggata tggacgtgtt accagtggcc 840
 tgggatcaca ttggcgccga gatttccacc gagtttgact acgctgatga actggacccc 900
 tggcccaaag ggctgccgga agaagtgcga caggaattta ccgatcgcta caccgctttc 960
 tttaaactgt ttttgaaata ccgcgatgat attgaaaggg tcaccttctg gggaaccgga 1020
 gatgcggaat cgtggaaaaa taatttccca gtaagggggc gcaccaacta cccgctgctg 1080
 tttgatcgcc gataccgcag aaaaccggcc tatgattcga ttgtcgaact gaccaaaaac 1140
 ctttaa 1146

<210> 148
 <211> 381
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(28)

<400> 148
 Met Thr Phe Ser Arg Arg Gln Phe Leu Leu Gln Thr Ser Ala Gly Leu
 1 5 10 15
 Ala Leu Leu Ser Thr Ala Lys Met Arg Ala Phe Ala Arg Ala Val Asp
 20 25 30
 Glu Val Gly Leu Lys Asp His Phe Lys Asp His Phe His Ile Gly Thr
 35 40 45
 Ala Ile Ser Gly Arg Leu Met Thr Glu Met Pro Ala Phe Tyr Arg Asp
 50 55 60
 Leu Val Thr Arg Glu Phe Ser Ala Ile Thr Met Glu Asn Asp Met Lys
 65 70 75 80
 Trp Glu Arg Leu His Pro Lys Glu Gly Gln Trp Asp Trp Glu Ile Ala
 85 90 95

Asp Lys Phe Val Asn Phe Gly Glu Glu Asn Asp Met Tyr Ile Val Gly
 100 105 110
 His Val Leu Val Trp His Ser Gln Thr Pro Asp Trp Val Phe Gln Asp
 115 120 125
 Ser Arg Gly Lys Pro Ile Ser Arg Asp Ala Leu Leu Lys Arg Met Arg
 130 135 140
 His Gln Ile Glu Gln Met Ala Gly Arg Tyr Lys Gly Arg Val His Ala
 145 150 155 160
 Trp Asp Val Val Asn Glu Ala Val Asp Glu Asp Gln Gly Trp Arg Lys
 165 170 175
 Ser Pro Trp Phe Asn Ile Ile Gly Pro Glu Phe Met Glu His Ala Phe
 180 185 190
 Asn Tyr Ala His Glu Val Asp Pro Asp Ala His Leu Leu Tyr Asn Asp
 195 200 205
 Tyr Asn Met His Gly Arg Glu Lys Arg Glu Phe Val Leu Asp Phe Ile
 210 215 220
 Lys Arg Tyr Lys Lys Lys Gly Ile Pro Ile Gln Gly Ile Gly Met Gln
 225 230 235 240
 Gly His Val Gly Leu Ser Phe Pro Asp Ile Ser Glu Phe Glu Lys Ser
 245 250 255
 Leu Gln Ala Tyr Ala Lys Gln Gly Met Arg Met His Ile Thr Glu Leu
 260 265 270
 Asp Met Asp Val Leu Pro Val Ala Trp Asp His Ile Gly Ala Glu Ile
 275 280 285
 Ser Thr Glu Phe Asp Tyr Ala Asp Glu Leu Asp Pro Trp Pro Lys Gly
 290 295 300
 Leu Pro Glu Glu Val Glu Gln Glu Phe Thr Asp Arg Tyr Thr Ala Phe
 305 310 315 320
 Phe Lys Leu Phe Leu Lys Tyr Arg Asp Asp Ile Glu Arg Val Thr Phe
 325 330 335
 Trp Gly Thr Gly Asp Ala Glu Ser Trp Lys Asn Asn Phe Pro Val Arg
 340 345 350
 Gly Arg Thr Asn Tyr Pro Leu Leu Phe Asp Arg Arg Tyr Arg Arg Lys
 355 360 365
 Pro Ala Tyr Asp Ser Ile Val Glu Leu Thr Lys Asn Leu
 370 375 380

<210> 149
 <211> 1044
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 149
 atgaagaagc tttttgtcgc ggtcgttttg ttgcccttag caactttttt cgcgtcggac 60
 ggattggagg gagaaccttt gagatcggtta gccgagaaac ttggcatcta catcggttac 120
 gcttcgatca accattttctg gactcttccg gattcaaaca agtacacaga agtggcaaag 180
 agggagttca acatactcac gccagagaac caaatgaagt gggacagcct tcaccagag 240
 cctgacaggt acaacttcac ttacgcagag cgatcatgtc agttcgtttt ggaaaaaac 300
 atgctcgttc acggccacac actcgttttg cacaaccaac ttccgttctg gttgaacaga 360
 cagtggacca aagaagaact cctgaaagtc cttgaggacc acatcaaaac agtcgtcgg 420
 cacttcaaag gaaggggtgaa gatttgggac gtggtgaacg aagcggtcag cgacatgggc 480
 agttacagag agaccatttg gtacaagacc atcggaccg agtacatcga aaaggcattc 540
 gtgtgggcaa gacaagccga tccggaagcg atcctcatat acaacgacta caatatagaa 600
 acgatcaatc ccaaatcgaa tttcacctac cagctcatca aggagctgaa agaaaaagg 660
 gtgccgatag acggcatcgg ttttcaaagt cacatagaca tcaacggaat aaactatgac 720
 agtttcagaa acaacctgaa gaggttcgct gatctcggtc tgaagctcta catcacgga 780
 atggatgtga gaatacccaa gaacgcaact gaaaaagact tggacagaca ggcagaaatc 840
 tacgcgaaga tcttcgaaat ctgcttagag aatcctgcgg tccaagccat acagttctgg 900
 ggtttcacgg acaagtattc ctgggtgcct ggctttttca gcgggtacga tcatgcgctg 960
 atctttgaca gggactacag cccaagccc gcgtattttg cgataaagag ggtgctcgaa 1020
 gccaaggtga gcaagggacg ctga 1044

<210> 150
 <211> 347
 <212> PRT
 <213> Unknown

<220>

<223> obtained from an environmental sample

<221> SIGNAL

<222> (1)...(18)

<400> 150

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Met Lys Lys Leu Phe Val Ala Val Val Leu Leu Pro Leu Ala Thr Phe
 1      5      10      15
Phe Ala Ser Asp Gly Leu Glu Gly Glu Pro Leu Arg Ser Leu Ala Glu
      20      25      30
Lys Leu Gly Ile Tyr Ile Gly Tyr Ala Ser Ile Asn His Phe Trp Thr
      35      40      45
Leu Pro Asp Ser Asn Lys Tyr Thr Glu Val Ala Lys Arg Glu Phe Asn
      50      55      60
Ile Leu Thr Pro Glu Asn Gln Met Lys Trp Asp Ser Leu His Pro Glu
      65      70      75      80
Pro Asp Arg Tyr Asn Phe Thr Tyr Ala Glu Arg His Val Glu Phe Ala
      85      90      95
Leu Glu Asn Asn Met Leu Val His Gly His Thr Leu Val Trp His Asn
      100      105      110
Gln Leu Pro Phe Trp Leu Asn Arg Gln Trp Thr Lys Glu Glu Leu Leu
      115      120      125
Lys Val Leu Glu Asp His Ile Lys Thr Val Val Gly His Phe Lys Gly
      130      135      140
Arg Val Lys Ile Trp Asp Val Val Asn Glu Ala Val Ser Asp Met Gly
      145      150      155      160
Ser Tyr Arg Glu Thr Ile Trp Tyr Lys Thr Ile Gly Pro Glu Tyr Ile
      165      170      175
Glu Lys Ala Phe Val Trp Ala Arg Gln Ala Asp Pro Glu Ala Ile Leu
      180      185      190
Ile Tyr Asn Asp Tyr Asn Ile Glu Thr Ile Asn Pro Lys Ser Asn Phe
      195      200      205
Thr Tyr Gln Leu Ile Lys Glu Leu Lys Glu Lys Gly Val Pro Ile Asp
      210      215      220
Gly Ile Gly Phe Gln Met His Ile Asp Ile Asn Gly Ile Asn Tyr Asp
      225      230      235      240
Ser Phe Arg Asn Asn Leu Lys Arg Phe Ala Asp Leu Gly Leu Lys Leu
      245      250      255
Tyr Ile Thr Glu Met Asp Val Arg Ile Pro Lys Asn Ala Thr Glu Lys
      260      265      270
Asp Leu Asp Arg Gln Ala Glu Ile Tyr Ala Lys Ile Phe Glu Ile Cys
      275      280      285
Leu Glu Asn Pro Ala Val Gln Ala Ile Gln Phe Trp Gly Phe Thr Asp
      290      295      300
Lys Tyr Ser Trp Val Pro Gly Phe Phe Ser Gly Tyr Asp His Ala Leu
      305      310      315      320
Ile Phe Asp Arg Asp Tyr Ser Pro Lys Pro Ala Tyr Phe Ala Ile Lys
      325      330      335
Arg Val Leu Glu Ala Lys Val Ser Lys Gly Arg
      340      345

```

<210> 151

<211> 1131

<212> DNA

<213> Unknown

<220>

<223> obtained from an environmental sample

<400> 151

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atgcgatcta tgccacttta tgtgttgta tgcagcgccc ttctgaccgg cagcctatat 60
gcacaagacc aaaatgcttc tttaaaacag gccttttagc aaaacttttag tattggcaca 120
gccttaagtg ctacacaaat tcagggcaca gagccgggca cactggaatt ggtaacacag 180
caatttaacg cggtgacggc agaaaacgtg atgaagtggg aaatcattga acctgtggaa 240
ggccagttca accttgctgc cgccgacgcc atgattgaat tcgccgaagc caatcatatc 300
aaggtgatag gccatgtgct gttatggcac gaacaaacac cagcctgggt atttctggac 360
gccaaaggcc aggccgcctc aaagggaactg gtgttatcac ggctaaaaaa ccatatcaat 420

```

gccgtaatgg	gccgctacaa	aggccgtatt	catggctggg	atgcagtcaa	cgaagcctta	480
aatgaagacg	gcactctgcg	ccaatccaac	tggtataaag	ctttaggcga	cgactatata	540
gccacagctct	ttgaactggc	gcatacaggcc	gacccgaaag	ccgaactcta	ttacaacgac	600
ttcaatttat	ttaaaccgga	aaaacgcgct	ggtgtactca	aactggtggc	agctttaaaa	660
gcgaaaaatg	tgccatatcca	cggcataggc	gagcaaggcc	attacagcct	ggattaccct	720
gagctgcagc	aagtagaaga	ctctattgtg	gcttttaaaa	acactggcct	gaaagtgggtg	780
attaccgaac	tggtatcttc	agttttacc	ttccctgagc	cagaaaagat	tggtgctgat	840
atctcactca	atatgcagtt	aaaacaagaa	cttaatccct	acgccgatgg	cttaccctaaa	900
gaagtcagcg	atcaactgac	agaaaaatc	ctgcaattat	ttcagctatt	tttacgccac	960
agcgacgcca	tcgaacgcgt	gaccttatgg	ggcgtaaacg	acaaccaaac	ctggcgcaac	1020
aactggccaa	tgaaaggcag	aacagactac	cccttactct	tcgaccggaa	aaaccagcca	1080
aaagaagtgg	ttcctgcatt	gattaaactg	gcggaaaaag	ctggtaaata	a	1131

<210> 152

<211> 376

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample

<221> SIGNAL

<222> (1)...(21)

<400> 152

Met	Arg	Ser	Met	Pro	Leu	Tyr	Val	Leu	Leu	Cys	Ser	Ala	Leu	Leu	Thr
1				5				10					15		
Gly	Ser	Leu	Tyr	Ala	Gln	Asp	Gln	Asn	Ala	Ser	Leu	Lys	Gln	Ala	Phe
			20					25					30		
Ser	Lys	Asn	Phe	Ser	Ile	Gly	Thr	Ala	Leu	Ser	Ala	Thr	Gln	Ile	Gln
		35					40					45			
Gly	Lys	Glu	Pro	Gly	Thr	Leu	Glu	Leu	Val	Thr	Gln	Gln	Phe	Asn	Ala
	50					55					60				
Val	Thr	Ala	Glu	Asn	Val	Met	Lys	Trp	Glu	Ile	Ile	Glu	Pro	Val	Glu
65					70					75					80
Gly	Gln	Phe	Asn	Phe	Ala	Ala	Ala	Asp	Ala	Met	Ile	Glu	Phe	Ala	Glu
				85					90					95	
Ala	Asn	His	Ile	Lys	Val	Ile	Gly	His	Val	Leu	Leu	Trp	His	Glu	Gln
		100						105					110		
Thr	Pro	Ala	Trp	Val	Phe	Leu	Asp	Ala	Lys	Gly	Gln	Ala	Ala	Ser	Lys
		115					120					125			
Glu	Leu	Val	Leu	Ser	Arg	Leu	Lys	Asn	His	Ile	Asn	Ala	Val	Met	Gly
	130					135					140				
Arg	Tyr	Lys	Gly	Arg	Ile	His	Gly	Trp	Asp	Ala	Val	Asn	Glu	Ala	Leu
145					150				155						160
Asn	Glu	Asp	Gly	Thr	Leu	Arg	Gln	Ser	Asn	Trp	Tyr	Lys	Ala	Leu	Gly
				165					170					175	
Asp	Asp	Tyr	Ile	Ala	Thr	Val	Phe	Glu	Leu	Ala	His	Gln	Ala	Asp	Pro
		180						185					190		
Lys	Ala	Glu	Leu	Tyr	Tyr	Asn	Asp	Phe	Asn	Leu	Phe	Lys	Pro	Glu	Lys
		195					200					205			
Arg	Ala	Gly	Val	Leu	Lys	Leu	Val	Ala	Ala	Leu	Lys	Ala	Lys	Asn	Val
	210					215					220				
Pro	Ile	His	Gly	Ile	Gly	Glu	Gln	Gly	His	Tyr	Ser	Leu	Asp	Tyr	Pro
225					230				235						240
Glu	Leu	Gln	Gln	Val	Glu	Asp	Ser	Ile	Val	Ala	Phe	Lys	Asn	Thr	Gly
			245						250					255	
Leu	Lys	Val	Val	Ile	Thr	Glu	Leu	Asp	Ile	Ser	Val	Leu	Pro	Phe	Pro
		260						265					270		
Glu	Pro	Glu	Lys	Ile	Gly	Ala	Asp	Ile	Ser	Leu	Asn	Met	Gln	Leu	Lys
		275					280					285			
Gln	Glu	Leu	Asn	Pro	Tyr	Ala	Asp	Gly	Leu	Pro	Lys	Glu	Val	Ser	Asp
	290					295					300				
Gln	Leu	Thr	Glu	Lys	Tyr	Leu	Gln	Leu	Phe	Gln	Leu	Phe	Leu	Arg	His
305					310				315						320
Ser	Asp	Ala	Ile	Glu	Arg	Val	Thr	Leu	Trp	Gly	Val	Asn	Asp	Asn	Gln
			325						330					335	
Thr	Trp	Arg	Asn	Asn	Trp	Pro	Met	Lys	Gly	Arg	Thr	Asp	Tyr	Pro	Leu
			340					345					350		

Leu Phe Asp Arg Lys Asn Gln Pro Lys Glu Val Val Pro Ala Leu Ile
 355 360 365
 Lys Leu Ala Glu Lys Ala Gly Lys
 370 375

<210> 153
 <211> 1020
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 153
 atgggtgcta tgggcctggc ggcgctgtat tcgctgccag ccaatgcaca gacctgcatt 60
 acgcagagtc agacgggcac caacaacggc cactattttt cgttctggaa ggacaatccg 120
 ggaacgggtca atttctgtat gtatgccaac ggccgttaca cgtctaactg gaacggcatc 180
 aacaattggg tcggcggcaa aggcctggcaa accggctcgc gcagaaacgt cacctactct 240
 ggctcggtta actctcccgg caatggctat ctggctgctc tactggctgg accaccaatc 300
 ctgttggtcg agtactacat catcgagagc tggggaaatt ggcgcccgcc gggttcggat 360
 ggaacattgt taggcaccgt cactagcgac ggcggtactt acgatatacta tcgctcgcgc 420
 cgcaccaacg cgccttgtat cactggcaac tcctgtaact tcgatcagta ctggagcgtg 480
 cggcaatcca agcgcgtggg cggcacgatt accacgggca atcacttcga cgcttgggcg 540
 gcacgcggct tgaacctcgg cacgcacaac taccaagtga tggcgaccga gggatatcag 600
 agcaacggca gtcgcgacat caccattagc gacaacccgg gaccgacgcc aggaccact 660
 ccgaaccgca atcccacgcc gggcaccaag aatttcacgg tgcgcgcgcg cggaaaccgcg 720
 ggggggtgagt ccatcagct gcgtgtgaac aatcagaacg tgcagacctg gacgctgtcg 780
 accagctact agaacttcac ggcgtccacg acgttgagtg gtggcatcac ggtcgcgttc 840
 accaatgatg gtggtagtcg agacgttcag gtggattaca tccaggtgaa cggcgcaact 900
 cgacaatccg agagccagac gtacaacacc ggcctctatg ccaacggcag ttgcggcggc 960
 ggctcgaaca gcgagtggat gcattgcaat ggagcgatcg gctacggcaa cacgccgtag 1020

<210> 154
 <211> 339
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(16)

<400> 154
 Met Gly Ala Met Gly Leu Ala Ala Leu Tyr Ser Leu Pro Ala Asn Ala
 1 5 10 15
 Gln Thr Cys Ile Thr Gln Ser Gln Thr Gly Thr Asn Asn Gly His Tyr
 20 25 30
 Phe Ser Phe Trp Lys Asp Asn Pro Gly Thr Val Asn Phe Cys Met Tyr
 35 40 45
 Ala Asn Gly Arg Tyr Thr Ser Asn Trp Asn Gly Ile Asn Asn Trp Val
 50 55 60
 Gly Gly Lys Gly Trp Gln Thr Gly Ser Arg Arg Asn Val Thr Tyr Ser
 65 70 75 80
 Gly Ser Phe Asn Ser Pro Gly Asn Gly Tyr Leu Ala Ala Leu Leu Ala
 85 90 95
 Gly Pro Pro Ile Leu Leu Val Glu Tyr Tyr Ile Ile Glu Ser Trp Gly
 100 105 110
 Asn Trp Arg Pro Pro Gly Ser Asp Gly Thr Leu Leu Gly Thr Val Thr
 115 120 125
 Ser Asp Gly Gly Thr Tyr Asp Ile Tyr Arg Ser Arg Arg Thr Asn Ala
 130 135 140
 Pro Cys Ile Thr Gly Asn Ser Cys Asn Phe Asp Gln Tyr Trp Ser Val
 145 150 155 160
 Arg Gln Ser Lys Arg Val Gly Gly Thr Ile Thr Thr Gly Asn His Phe
 165 170 175
 Asp Ala Trp Ala Ala Arg Gly Leu Asn Leu Gly Thr His Asn Tyr Gln
 180 185 190
 Val Met Ala Thr Glu Gly Tyr Gln Ser Asn Gly Ser Ser Asp Ile Thr

Ile	Ser	Asp	Asn	Pro	Gly	Pro	Thr	Pro	Gly	Pro	Thr	Pro	Asn	Pro	Asn
210						215					220				
Pro	Thr	Pro	Gly	Thr	Lys	Asn	Phe	Thr	Val	Arg	Ala	Arg	Gly	Thr	Ala
225					230					235					240
Gly	Gly	Glu	Ser	Ile	Thr	Leu	Arg	Val	Asn	Asn	Gln	Asn	Val	Gln	Thr
				245					250					255	
Trp	Thr	Leu	Ser	Thr	Ser	Tyr	Gln	Asn	Phe	Thr	Ala	Ser	Thr	Thr	Leu
				260				265					270		
Ser	Gly	Gly	Ile	Thr	Val	Ala	Phe	Thr	Asn	Asp	Gly	Gly	Ser	Arg	Asp
				275			280					285			
Val	Gln	Val	Asp	Tyr	Ile	Gln	Val	Asn	Gly	Ala	Thr	Arg	Gln	Ser	Glu
				290		295					300				
Ser	Gln	Thr	Tyr	Asn	Thr	Gly	Leu	Tyr	Ala	Asn	Gly	Ser	Cys	Gly	Gly
305					310					315					320
Gly	Ser	Asn	Ser	Glu	Trp	Met	His	Cys	Asn	Gly	Ala	Ile	Gly	Tyr	Gly
				325					330					335	
Asn	Thr	Pro													

<210> 155
 <211> 1836
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 155	atgaaaggat	taattgcggc	agcgcttgct	ggcttggcat	tcggggcctc	cctatcctgg	60
	ggacagtgca	caacgtttac	caccagtacc	attcagaatt	gtaatggcat	tgattacgag	120
	ctctggagtc	agaataacaa	gggcaccgta	agcatgaaga	ttacgggagg	gagcacgaat	180
	ccgaatggag	gaactttcga	tgctacctgg	aatggcaccg	agaatatcct	ggctagagct	240
	ggtaagaaat	ggggctcgtc	cagcactacc	acccccacgt	ccgcaggcaa	tattactctt	300
	gaattcgcg	cgacatgggtc	ctcaagcgat	aacgtaaaaa	tgcttggagt	ctatggctgg	360
	gcgtactatc	caactggaag	tatccccgact	aaacaggaaa	atggagcaag	tacctcattc	420
	acaaatcaaa	ttgagtacta	catcatccag	gatcgtggta	gctataatgc	tgcatcgggt	480
	ggaacgaact	ccaaaaaata	cggcgaagg	acgatcgatg	gaattctgta	tgaattctat	540
	atcgagaca	gaatcaacca	gcctgatctg	tcaggaaaaga	gtggaaactt	caagcaatac	600
	ttcagcgctc	cgaaaagtac	gagcagccat	aggcaaagt	ggacgattac	cgtttccaaa	660
	catttcagg	cctgggaaaa	tgccggaatg	aaaatgatgt	cctgtcgctt	gtatgaagtc	720
	gcaatgaaag	tcgagtccta	taccggttct	gcgaccggtg	ttggctctgc	gaaggttaca	780
	aagaatatac	tcaccattgg	tggaatcttg	agcagtagca	gtactgcaag	cagtagcagc	840
	acagtaagta	gcagtagcag	caatgcatat	acgcttgctc	cgaaatgtttc	tcccgtgga	900
	gccggaacag	tgaccaggag	ccccaatact	gcgacctatg	ccccgaatgc	ttcagtagac	960
	cttactgcaa	cgccgagtac	cggttgga	tttgtcgggt	gggctgggga	tcttacgtca	1020
	actacgagta	ctgctaccgt	caccatgacc	aaagatatta	ccgcaactgc	aaaatttgaa	1080
	ctgggtatcg	gagatggcac	gaccaacttg	atcaaggatg	gaaacttccc	cagtagcagc	1140
	gtcatctcca	caggtgatgg	cacctcctgg	aagctcgggc	aaggtagaaa	ctggggta	1200
	tccgcagcaa	cgacgagtgt	cagcaatgga	atcgcgactg	tcaatgtgac	caccattgga	1260
	tctcaaacct	atcaaccca	gctaattcag	tataacgtgg	ctctttacaa	ggatatgagc	1320
	tacaagctca	ccttcaaggc	aaaagctgct	gctgcaagga	aaattgaagt	cgatttccaa	1380
	cagtcgggtg	acccatgggc	tggaatgct	tccaaggaat	tcgatcttac	aacgacagag	1440
	cagacatatg	agttcgtatt	taaaatgact	agcgctactg	acacggcttc	acagttcgcg	1500
	ttcaatctcg	gccaggcaac	aggcgccgtc	aattattagt	atgtaaaagct	agtatatagc	1560
	acagctggta	caacacccgt	attccgtgga	tataatgagg	cggcaacaca	ggagaggcct	1620
	gtattcatat	ccttggtatg	taggacgttg	aacattgttc	cagtggtatg	agccaaactg	1680
	caggtcaagt	tagtggacat	caatggtaag	atgagagcct	ccttcaatgt	ggtcggaatt	1740
	gcttccatcc	cgctgtccaa	tatccccgct	ggcggttatt	atattgacgt	aagtgggtgac	1800
	ggcggttaagc	aggcatcccc	gatagttctg	gaataa			1836

<210> 156
 <211> 611
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL

<222> (1)...(21)

<400> 156

Met Lys Gly Leu Ile Ala Ala Ala Leu Ala Gly Leu Ala Phe Gly Ala
 1 5 10 15
 Ser Leu Ser Trp Gly Gln Cys Thr Thr Phe Thr Thr Ser Thr Ile Gln
 20 25 30
 Asn Cys Asn Gly Ile Asp Tyr Glu Leu Trp Ser Gln Asn Lys Gly
 35 40 45
 Thr Val Ser Met Lys Ile Thr Gly Gly Ser Thr Asn Pro Asn Gly Gly
 50 55 60
 Thr Phe Asp Ala Thr Trp Asn Gly Thr Glu Asn Ile Leu Ala Arg Ala
 65 70 75 80
 Gly Lys Lys Trp Gly Ser Ser Ser Thr Thr Thr Pro Thr Ser Ala Gly
 85 90 95
 Asn Ile Thr Leu Glu Phe Ala Ala Thr Trp Ser Ser Ser Asp Asn Val
 100 105 110
 Lys Met Leu Gly Val Tyr Gly Trp Ala Tyr Tyr Pro Thr Gly Ser Ile
 115 120 125
 Pro Thr Lys Gln Glu Asn Gly Ala Ser Thr Ser Phe Thr Asn Gln Ile
 130 135 140
 Glu Tyr Tyr Ile Ile Gln Asp Arg Gly Ser Tyr Asn Ala Ala Ser Gly
 145 150 155 160
 Gly Thr Asn Ser Lys Lys Tyr Gly Glu Gly Thr Ile Asp Gly Ile Leu
 165 170 175
 Tyr Glu Phe Tyr Ile Ala Asp Arg Ile Asn Gln Pro Asp Leu Ser Gly
 180 185 190
 Lys Ser Gly Asn Phe Lys Gln Tyr Phe Ser Val Pro Lys Ser Thr Ser
 195 200 205
 Ser His Arg Gln Ser Gly Thr Ile Thr Val Ser Lys His Phe Gln Ala
 210 215 220
 Trp Glu Asn Ala Gly Met Lys Met Met Ser Cys Arg Leu Tyr Glu Val
 225 230 235 240
 Ala Met Lys Val Glu Ser Tyr Thr Gly Ser Ala Thr Gly Val Gly Ser
 245 250 255
 Ala Lys Val Thr Lys Asn Ile Leu Thr Ile Gly Gly Ile Leu Ser Ser
 260 265 270
 Ser Ser Thr Ala Ser Ser Ser Ser Thr Val Ser Ser Ser Ser Asn
 275 280 285
 Ala Tyr Thr Leu Val Thr Asn Val Ser Pro Ala Gly Ala Gly Thr Val
 290 295 300
 Thr Arg Ser Pro Asn Thr Ala Thr Tyr Ala Pro Asn Ala Ser Val Gln
 305 310 315 320
 Leu Thr Ala Thr Pro Ser Thr Gly Trp Lys Phe Val Gly Trp Ala Gly
 325 330 335
 Asp Leu Thr Ser Thr Thr Ser Thr Ala Thr Val Thr Met Thr Lys Asp
 340 345 350
 Ile Thr Ala Thr Ala Lys Phe Glu Leu Val Ser Gly Asp Gly Thr Thr
 355 360 365
 Asn Leu Ile Lys Asp Gly Asn Phe Pro Ser Ser Ser Val Ile Ser Thr
 370 375 380
 Gly Asp Gly Thr Ser Trp Lys Leu Gly Gln Gly Thr Asn Trp Gly Asn
 385 390 395 400
 Ser Ala Ala Thr Thr Ser Val Ser Asn Gly Ile Ala Thr Val Asn Val
 405 410 415
 Thr Thr Ile Gly Ser Gln Thr Tyr Gln Pro Gln Leu Ile Gln Tyr Asn
 420 425 430
 Val Ala Leu Tyr Lys Asp Met Ser Tyr Lys Leu Thr Phe Lys Ala Lys
 435 440 445
 Ala Ala Ala Ala Arg Lys Ile Glu Val Ala Phe Gln Gln Ser Val Asp
 450 455 460
 Pro Trp Ala Gly Tyr Ala Ser Lys Glu Phe Asp Leu Thr Thr Thr Glu
 465 470 475 480
 Gln Thr Tyr Glu Phe Val Phe Lys Met Thr Ser Ala Thr Asp Thr Ala
 485 490 495
 Ser Gln Phe Ala Phe Asn Leu Gly Gln Ala Thr Gly Ala Val Asn Ile
 500 505 510
 Ser Asp Val Lys Leu Val Tyr Thr Thr Ala Gly Thr Thr Pro Val Phe

515 520 525
 Arg Gly Tyr Asn Glu Ala Ala Thr Gln Glu Arg Pro Val Phe Ile Ser
 530 535 540
 Leu Asp Gly Arg Thr Leu Asn Ile Val Pro Val Tyr Gly Ala Lys Leu
 545 550 555
 Gln Val Lys Leu Val Asp Ile Asn Gly Lys Met Arg Ala Ser Phe Asn
 565 570 575
 Val Val Gly Ile Ala Ser Ile Pro Leu Ser Asn Ile Pro Ala Gly Arg
 580 585 590
 Tyr Tyr Ile Asp Val Ser Gly Asp Gly Val Lys Gln Ala Ser Pro Ile
 595 600 605
 Val Leu Glu
 610

<210> 157
 <211> 645
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 157
 atgtttaagt taagtaagaa aattttgatg gtgttattaa caatttcaat gagttttatt 60
 agcttatttg cagtaaccgc gtatgcagct tgcacagact actggcaaaa ttggactgat 120
 ggtggtggga cagtaaatgc taccaatgga tctgatggca attacagtgt ttcattggta 180
 aattgcggga attttgttgt tggtaaaggc tggactaccg gatcagcaac tagggtaata 240
 aactataatg ccggagcctt ttcgccgtcc ggcaatggat atttagctct ttatgggtgg 300
 acgagaaatt cactcataga atattacgtc gttgatagct gggggactta tagacctact 360
 ggaacttata aaggcactgt gactagtgtat ggagggacat atgacatata cacgactaca 420
 cgaaccaacg caccttccat tgacggcaat aatacaaatt tcacccagtt ctggagtgtt 480
 aggcagtcaa agagaccgat tggtaaccaac aataccatca cttttagcaa ccacgttaac 540
 gcctggaaga gtaaaggaat gaatctgggg agtagttggg cttatcaggt attagcgaca 600
 gagggataatc aaagtagtgg gtactctaac gtaacggctt ggtaa 645

<210> 158
 <211> 214
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(29)

<400> 158
 Met Phe Lys Leu Ser Lys Lys Ile Leu Met Val Leu Leu Thr Ile Ser
 1 5 10 15
 Met Ser Phe Ile Ser Leu Phe Ala Val Thr Ala Tyr Ala Ala Ser Thr
 20 25 30
 Asp Tyr Trp Gln Asn Trp Thr Asp Gly Gly Gly Thr Val Asn Ala Thr
 35 40 45
 Asn Gly Ser Asp Gly Asn Tyr Ser Val Ser Trp Ser Asn Cys Gly Asn
 50 55 60
 Phe Val Val Gly Lys Gly Trp Thr Thr Gly Ser Ala Thr Arg Val Ile
 65 70 75 80
 Asn Tyr Asn Ala Gly Ala Phe Ser Pro Ser Gly Asn Gly Tyr Leu Ala
 85 90 95
 Leu Tyr Gly Trp Thr Arg Asn Ser Leu Ile Glu Tyr Tyr Val Val Asp
 100 105 110
 Ser Trp Gly Thr Tyr Arg Pro Thr Gly Thr Tyr Lys Gly Thr Val Thr
 115 120 125
 Ser Asp Gly Gly Thr Tyr Asp Ile Tyr Thr Thr Thr Arg Thr Asn Ala
 130 135 140
 Pro Ser Ile Asp Gly Asn Asn Thr Asn Phe Thr Gln Phe Trp Ser Val
 145 150 155 160
 Arg Gln Ser Lys Arg Pro Ile Gly Thr Asn Asn Thr Ile Thr Phe Ser
 165 170 175

Asn His Val Asn Ala Trp Lys Ser Lys Gly Met Asn Leu Gly Ser Ser
 180 185 190
 Trp Ala Tyr Gln Val Leu Ala Thr Glu Gly Tyr Gln Ser Ser Gly Tyr
 195 200 205
 Ser Asn Val Thr Val Trp
 210

<210> 159
 <211> 1041
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 159
 atgatcagtc tcaaacgagt ggcggcgctc ctgtgcgtcg caggtctggg catgtctgcg 60
 gcaaacgcgc agacctgcct cacgtcgagt caaacggca ctaacaatgg cttctattat 120
 tccttctgga aggacagtcc gggcacgggtg aatttttgcc tgcagtccgg cggccgttac 180
 acatcgaact ggagcggcat caacaactgg gtgggcggca agggatggca gaccggttca 240
 cgccggaaca tcacgtactc gggcagcttc aattcaccgg gcaacggcta cctggcgctt 300
 tacggatgga ccaccaatcc actcgtcgag tactacgtcg tcgatatgctg ggggagctgg 360
 cgctccgccgg gttcgggacgg aacgttcctg gggacgggtca acagcgatgg cggaacgtat 420
 gacatctatc gcgcgcagcg ggtcaacgcg ccgtccatca tcggcaacgc cacgttctat 480
 caatactgga gcgttcggca gtcgaagcgg gtaggtggga cgatcaccac cggaaaccac 540
 ttcgacgcgt gggccagcgt gggcctgaac ctgggcactc acaactacca gatcatggcg 600
 accgagggct accaaagcag cggcagctcc gacatcacgg tgagtgaagg cggtagcagc 660
 agtgggtggcg gaagcagcac gagcagcagc agcggcggtg gtggcaccaa gagcttcacg 720
 gttcgtgctc gcggtaccgc gggcgggtgag tccatcacgc tgcgcgtgaa caaccagaac 780
 gtgcagacct ggacgctggg caccagcatg acgaactaca cggcgtcgac ttcactgagc 840
 ggcggcatca ccgtgggtgta cacgaacgac agcggtaacc gcgacgtgca ggtggactac 900
 atcgtcgtga acggccagac gcgccagtc gaagcccaga gctacaacac cggcctttat 960
 gcgaacgggc gttgcggcgg tggctccaac agcgaatgga tgcattgcaa cggcgccatc 1020
 ggctacggca atacaccgta a 1041

<210> 160
 <211> 346
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(23)

<400> 160
 Met Ile Ser Leu Lys Arg Val Ala Ala Leu Leu Cys Val Ala Gly Leu
 1 5 10 15
 Gly Met Ser Ala Ala Asn Ala Gln Thr Cys Leu Thr Ser Ser Gln Thr
 20 25 30
 Gly Thr Asn Asn Gly Phe Tyr Tyr Ser Phe Trp Lys Asp Ser Pro Gly
 35 40 45
 Thr Val Asn Phe Cys Leu Gln Ser Gly Gly Arg Tyr Thr Ser Asn Trp
 50 55 60
 Ser Gly Ile Asn Asn Trp Val Gly Gly Lys Gly Trp Gln Thr Gly Ser
 65 70 75 80
 Arg Arg Asn Ile Thr Tyr Ser Gly Ser Phe Asn Ser Pro Gly Asn Gly
 85 90 95
 Tyr Leu Ala Leu Tyr Gly Trp Thr Thr Asn Pro Leu Val Glu Tyr Tyr
 100 105 110
 Val Val Asp Ser Trp Gly Ser Trp Arg Pro Pro Gly Ser Asp Gly Thr
 115 120 125
 Phe Leu Gly Thr Val Asn Ser Asp Gly Gly Thr Tyr Asp Ile Tyr Arg
 130 135 140
 Ala Gln Arg Val Asn Ala Pro Ser Ile Ile Gly Asn Ala Thr Phe Tyr
 145 150 155 160
 Gln Tyr Trp Ser Val Arg Gln Ser Lys Arg Val Gly Gly Thr Ile Thr
 165 170 175

Thr Gly Asn His Phe Asp Ala Trp Ala Ser Val Gly Leu Asn Leu Gly
 180 185 190
 Thr His Asn Tyr Gln Ile Met Ala Thr Glu Gly Tyr Gln Ser Ser Gly
 195 200 205
 Ser Ser Asp Ile Thr Val Ser Glu Gly Gly Ser Ser Gly Gly Gly
 210 215 220
 Ser Ser Thr Ser Ser Ser Ser Gly Gly Gly Gly Thr Lys Ser Phe Thr
 225 230 235 240
 Val Arg Ala Arg Gly Thr Ala Gly Gly Glu Ser Ile Thr Leu Arg Val
 245 250 255
 Asn Asn Gln Asn Val Gln Thr Trp Thr Leu Gly Thr Ser Met Thr Asn
 260 265 270
 Tyr Thr Ala Ser Thr Ser Leu Ser Gly Gly Ile Thr Val Val Tyr Thr
 275 280 285
 Asn Asp Ser Gly Asn Arg Asp Val Gln Val Asp Tyr Ile Val Val Asn
 290 295 300
 Gly Gln Thr Arg Gln Ser Glu Ala Gln Ser Tyr Asn Thr Gly Leu Tyr
 305 310 315 320
 Ala Asn Gly Arg Cys Gly Gly Gly Ser Asn Ser Glu Trp Met His Cys
 325 330 335
 Asn Gly Ala Ile Gly Tyr Gly Asn Thr Pro
 340 345

<210> 161
 <211> 1047
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 161
 atgttcaaag gtcttttgaa atcgggtcctc accggcaagc gagccggtgc ggtgttcatc 60
 tgtctggccg gactgtggat gacacaggcg caggcgcaaga cgtgcatcgg ttcaccacaa 120
 acgggcaaca acggcggtct cttcttttcg ttctggaaag acaatccggg gtcggtgaat 180
 ttctgcatgt actccggcgg tcgctatacc tccagctgga gcggcatcaa caactgggta 240
 ggtgggaagg gctggcaaac cggttcatcc cgcacgggtga cgtattcggg cacgttcaac 300
 tcgccgggaa acggctacct gactctgtac ggatggacca ccaatccgct ggtcgagtac 360
 tacatcgtgg acagctgggg cagctaccgt ccgcctggag gccagggctt catgggcacg 420
 gtcaccagcg acggcggaac gtatgacatc taccgggttc gccgcaccaa tgcgccgtgc 480
 atcacaggca acaactgcaa cttcgaccag tactggagcg tgcgtcagtc gaggcgggtg 540
 ggccggcacc tcaccaccgc caaccatttc aacgcgtggc gtacgctcgg catgaatctc 600
 gggcagcaca actaccaggt gatggcgacc gaaggattcc agagcagtgg cagctcggac 660
 atcaccgtga gcgaaggatc tggcggtggc ggcggagggtg gcggcggtgg caccaagagc 720
 ttacgggtgc gcgcgcgcgg caccgcgggc ggcgagtcca tcacgctgcg cgtcaacaac 780
 caggtcgtgc agagctggac cttgagcacc agcatgcaga actacacggc ctcgaccacg 840
 atgagcggcg gcatcacggt gaacttcacc aacgacggca ccaaccgcga cgtgcagggtg 900
 gactacatca tcgtgaatgg ccagacgcgt cagtccgaag cgcagacgta caacaccggg 960
 ctgtacgcca acggccgttg cggtgccggg tcgaacagcg agtggtatgca ttgcaatggc 1020
 gcgatcgggt acggcgacac gccctga 1047

<210> 162
 <211> 348
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(32)

<400> 162
 Met Phe Lys Gly Leu Leu Lys Ser Val Leu Thr Gly Lys Arg Ala Gly
 1 5 10 15
 Ala Val Phe Ile Cys Leu Ala Gly Leu Trp Met Thr Gln Ala Gln Ala
 20 25 30
 Gln Thr Cys Ile Gly Ser Pro Gln Thr Gly Asn Asn Gly Gly Phe Phe
 35 40 45

Phe Ser Phe Trp Lys Asp Asn Pro Gly Ser Val Asn Phe Cys Met Tyr
 50 55 60
 Ser Gly Gly Arg Tyr Thr Ser Ser Trp Ser Gly Ile Asn Asn Trp Val
 65 70 75 80
 Gly Gly Lys Gly Trp Gln Thr Gly Ser Ser Arg Thr Val Thr Tyr Ser
 85 90 95
 Gly Thr Phe Asn Ser Pro Gly Asn Gly Tyr Leu Thr Leu Tyr Gly Trp
 100 105 110
 Thr Thr Asn Pro Leu Val Glu Tyr Tyr Ile Val Asp Ser Trp Gly Ser
 115 120 125
 Tyr Arg Pro Pro Gly Gly Gln Gly Phe Met Gly Thr Val Thr Ser Asp
 130 135 140
 Gly Gly Thr Tyr Asp Ile Tyr Arg Val Arg Arg Thr Asn Ala Pro Cys
 145 150 155 160
 Ile Thr Gly Asn Asn Cys Asn Phe Asp Gln Tyr Trp Ser Val Arg Gln
 165 170 175
 Ser Arg Arg Val Gly Gly Thr Ile Thr Thr Ala Asn His Phe Asn Ala
 180 185 190
 Trp Arg Thr Leu Gly Met Asn Leu Gly Gln His Asn Tyr Gln Val Met
 195 200 205
 Ala Thr Glu Gly Phe Gln Ser Ser Gly Ser Ser Asp Ile Thr Val Ser
 210 215 220
 Glu Gly Ser Gly Gly Gly Gly Gly Gly Gly Gly Thr Lys Ser
 225 230 235 240
 Phe Thr Val Arg Ala Arg Gly Thr Ala Gly Gly Glu Ser Ile Thr Leu
 245 250 255
 Arg Val Asn Asn Gln Val Val Gln Ser Trp Thr Leu Ser Thr Ser Met
 260 265 270
 Gln Asn Tyr Thr Ala Ser Thr Thr Met Ser Gly Gly Ile Thr Val Asn
 275 280 285
 Phe Thr Asn Asp Gly Thr Asn Arg Asp Val Gln Val Asp Tyr Ile Ile
 290 295 300
 Val Asn Gly Gln Thr Arg Gln Ser Glu Ala Gln Thr Tyr Asn Thr Gly
 305 310 315 320
 Leu Tyr Ala Asn Gly Arg Cys Gly Gly Gly Ser Asn Ser Glu Trp Met
 325 330 335
 His Cys Asn Gly Ala Ile Gly Tyr Gly Asp Thr Pro
 340 345

<210> 163
 <211> 1068
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 163
 atgaaagcaa agagaatgaa gttgttttgc gcattttttac tctgtttttac gcttgcactt 60
 cctggggcag tgcattgcga gacgatcacc agcaatttcg tcggtacgca tgacgggttat 120
 gactatgaat actggaagga cagcgggaat ggaactatgg ttctcggtag tggcgggtacg 180
 ttcagtgcag agtggagcaa tatcaataat attctgttcc gtaaaggcaa gaagttcaat 240
 gagacgcaga cccatcagca aattggaaac atttccataa cctatggtgc cacctaccaa 300
 ccgaatggca attcgtattt aacggctctat ggctggacgg ttgacccctt cgtcgaatat 360
 tacattgtcg atagctgggg cagctggcgt ccgcctggag catcgccaaa ggggactgtt 420
 aacgttgacg gaggaacgta tgacatttat gagacaactc gtgtcaacca gccttccatt 480
 aaaggcacgg caaccttcaa gcagtattgg agtgtccgga cgtcaaaacg gacgagcgga 540
 accatatctg taagcgagca cttaaggcc tgggagaaat tggggatgac catgggcaag 600
 atgtatgaag tcgcgcttac ggttgaaggc tatcaaagca gtggaagcgc taatgtgtat 660
 agccatacac tgacgatcgg cgggggaaca acacctccac caaccacagg cacaaagatc 720
 gaagccgaga gtatgaccaa aagcggacaa tacactggga atatcagctc gccgttcaac 780
 ggagtcgctt tgtatgccaa caatgattcc gtgaaattca cgcataattt caccgaccggc 840
 acccataact tctcactccg gggggcatca aacaactcca atatggcccc gggtgacctg 900
 aaaatcggcg ggcagacgaa ggggaccttc tatttcggcg gaagcagccc tgcgggtctat 960
 actctgaata atgtcagcca tggaaaccgga aatcaagagg ttgaactcgt tgtaaccgcc 1020
 gataacggaa catgggatgc tttcattgat tatctcgaga tccattaa 1068

<210> 164
 <211> 355

<212> PRT
<213> Unknown

<220>
<223> Obtained from an environmental sample

<221> SIGNAL
<222> (1)...(26)

<400> 164
Met Lys Ala Lys Arg Met Lys Leu Phe Ala Ala Phe Leu Leu Cys Phe
1 5 10 15
Thr Leu Ala Leu Pro Gly Ala Val His Ala Gln Thr Ile Thr Ser Asn
20 25 30
Ser Val Gly Thr His Asp Gly Tyr Asp Tyr Glu Tyr Trp Lys Asp Ser
35 40 45
Gly Asn Gly Thr Met Val Leu Gly Ser Gly Gly Thr Phe Ser Ala Glu
50 55 60
Trp Ser Asn Ile Asn Asn Ile Leu Phe Arg Lys Gly Lys Lys Phe Asn
65 70 75 80
Glu Thr Gln Thr His Gln Gln Ile Gly Asn Ile Ser Ile Thr Tyr Gly
85 90 95
Ala Thr Tyr Gln Pro Asn Gly Asn Ser Tyr Leu Thr Val Tyr Gly Trp
100 105 110
Thr Val Asp Pro Leu Val Glu Tyr Tyr Ile Val Asp Ser Trp Gly Ser
115 120 125
Trp Arg Pro Pro Gly Ala Ser Pro Lys Gly Thr Val Asn Val Asp Gly
130 135 140
Gly Thr Tyr Asp Ile Tyr Glu Thr Thr Arg Val Asn Gln Pro Ser Ile
145 150 155 160
Lys Gly Thr Ala Thr Phe Lys Gln Tyr Trp Ser Val Arg Thr Ser Lys
165 170 175
Arg Thr Ser Gly Thr Ile Ser Val Ser Glu His Phe Lys Ala Trp Glu
180 185 190
Lys Leu Gly Met Thr Met Gly Lys Met Tyr Glu Val Ala Leu Thr Val
195 200 205
Glu Gly Tyr Gln Ser Ser Gly Ser Ala Asn Val Tyr Ser His Thr Leu
210 215 220
Thr Ile Gly Gly Gly Thr Thr Pro Pro Pro Thr Thr Gly Thr Lys Ile
225 230 235 240
Glu Ala Glu Ser Met Thr Lys Ser Gly Gln Tyr Thr Gly Asn Ile Ser
245 250 255
Ser Pro Phe Asn Gly Val Ala Leu Tyr Ala Asn Asn Asp Ser Val Lys
260 265 270
Phe Thr His Asn Phe Thr Thr Gly Thr His Asn Phe Ser Leu Arg Gly
275 280 285
Ala Ser Asn Asn Ser Asn Met Ala Arg Val Asp Leu Lys Ile Gly Gly
290 295 300
Gln Thr Lys Gly Thr Phe Tyr Phe Gly Gly Ser Ser Pro Ala Val Tyr
305 310 315 320
Thr Leu Asn Asn Val Ser His Gly Thr Gly Asn Gln Glu Val Glu Leu
325 330 335
Val Val Thr Ala Asp Asn Gly Thr Trp Asp Ala Phe Ile Asp Tyr Leu
340 345 350
Glu Ile His
355

<210> 165
<211> 1047
<212> DNA
<213> Unknown

<220>
<223> obtained from an environmental sample

<400> 165
gtggggcgca ggagcgccgc cacggcattc atcggcctgg cagcgctgtg tgcctcggcc 60
gccaacgcgc agacctgtct gagctcgagt cagaccggca ccaacaacgg cttctactat 120
tcgttctgga ccgacggcgg tggctccgtg cagttctgcc tgcaatccgc cgggcgctac 180

acctccagct	ggagcaatgt	cggaaactgg	gtcgggtggca	agggctggca	gaccggcgcg	240
cgccgcaaca	tcaactattc	cggcagcttc	aatccctcgg	gtaacgcgta	cctggccgctc	300
tatggctgga	ccacgaatcc	cctgggtggag	tactacatcg	tcgacaactg	gggtacctat	360
cgtccaccgg	gtgggagagg	attcatgggc	acggttggtca	gcgatggcgg	cacctacgac	420
gtctaccgca	cgcaacgggt	caacgcgccc	tccattcagg	gcaacgcgac	cttctaccag	480
tactggagcg	ttcgccagtc	gaagcgacc	gggtggaacca	tctccaccgg	caaccatttc	540
gacggctggg	cgacgttcgg	catgaacctg	ggaaccttca	attaccagat	cgtaggcgacc	600
gagggctacc	agagcagcgg	caattccgac	atcacgggtga	gcgatggcgg	cagcagctcc	660
tcgtcctcca	gcagcagcag	ttcgtcgtcc	tccagcagcg	gcggtggcgg	caccaagagc	720
ttcacgggtg	gcgcgcgcgg	cacggccgga	ggcgagtcga	tcagcctgcg	ggtcaacaac	780
accaacgtgc	agacctgggtc	gctgaccacc	agctaccaga	atctcacggc	ctcgaccacg	840
ctgaccggcg	gcatcaccgt	caactacacc	aacgacagca	gcggtcacga	cgtacaggtg	900
gactacatca	tcgtgaacgg	ccagaccgcg	cagtcggagg	cgcagagcta	caacaccgga	960
ctctatgcca	acgggcgctg	cggtggtggt	ggctacagcg	agtggatgca	ttgcaacggc	1020
gccatcggct	acggcaatac	gccgtaa				1047

<210> 166

<211> 348

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample

<221> SIGNAL

<222> (1)...(23)

<400> 166

Val	Gly	Arg	Arg	Ser	Ala	Ala	Thr	Ala	Phe	Ile	Gly	Leu	Ala	Ala	Leu
1				5				10					15		
Cys	Ala	Ser	Ala	Ala	Asn	Ala	Gln	Thr	Cys	Leu	Ser	Ser	Ser	Gln	Thr
			20				25					30			
Gly	Thr	Asn	Asn	Gly	Phe	Tyr	Tyr	Ser	Phe	Trp	Thr	Asp	Gly	Gly	Gly
		35				40					45				
Ser	Val	Gln	Phe	Cys	Leu	Gln	Ser	Ala	Gly	Arg	Tyr	Thr	Ser	Ser	Trp
	50				55					60					
Ser	Asn	Val	Gly	Asn	Trp	Val	Gly	Gly	Lys	Gly	Trp	Gln	Thr	Gly	Ala
65				70				75							80
Arg	Arg	Asn	Ile	Asn	Tyr	Ser	Gly	Ser	Phe	Asn	Pro	Ser	Gly	Asn	Ala
			85					90						95	
Tyr	Leu	Ala	Val	Tyr	Gly	Trp	Thr	Thr	Asn	Pro	Leu	Val	Glu	Tyr	Tyr
			100					105					110		
Ile	Val	Asp	Asn	Trp	Gly	Thr	Tyr	Arg	Pro	Pro	Gly	Gly	Gln	Gly	Phe
		115				120						125			
Met	Gly	Thr	Val	Val	Ser	Asp	Gly	Gly	Thr	Tyr	Asp	Val	Tyr	Arg	Thr
	130					135					140				
Gln	Arg	Val	Asn	Ala	Pro	Ser	Ile	Gln	Gly	Asn	Ala	Thr	Phe	Tyr	Gln
145				150						155					160
Tyr	Trp	Ser	Val	Arg	Gln	Ser	Lys	Arg	Thr	Gly	Gly	Thr	Ile	Ser	Thr
			165					170						175	
Gly	Asn	His	Phe	Asp	Gly	Trp	Ala	Thr	Phe	Gly	Met	Asn	Leu	Gly	Thr
			180					185					190		
Phe	Asn	Tyr	Gln	Ile	Val	Ala	Thr	Glu	Gly	Tyr	Gln	Ser	Ser	Gly	Asn
		195				200						205			
Ser	Asp	Ile	Thr	Val	Ser	Asp	Gly	Gly	Ser	Ser	Ser	Ser	Ser	Ser	Ser
	210					215					220				
Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Gly	Gly	Gly	Gly	Thr	Lys	Ser
225						230				235					240
Phe	Thr	Val	Arg	Ala	Arg	Gly	Thr	Ala	Gly	Gly	Glu	Ser	Ile	Ser	Leu
			245					250						255	
Arg	Val	Asn	Asn	Thr	Asn	Val	Gln	Thr	Trp	Ser	Leu	Thr	Thr	Ser	Tyr
			260					265					270		
Gln	Asn	Leu	Thr	Ala	Ser	Thr	Thr	Leu	Thr	Gly	Gly	Ile	Thr	Val	Asn
		275						280				285			
Tyr	Thr	Asn	Asp	Ser	Ser	Gly	His	Asp	Val	Gln	Val	Asp	Tyr	Ile	Ile
		290				295					300				
Val	Asn	Gly	Gln	Thr	Arg	Gln	Ser	Glu	Ala	Gln	Ser	Tyr	Asn	Thr	Gly
305					310					315					320
Leu	Tyr	Ala	Asn	Gly	Arg	Cys	Gly	Gly	Gly	Gly	Tyr	Ser	Glu	Trp	Met

His Cys Asn Gly Ala Ile Gly Tyr Gly Asn Thr Pro
 340 325 330 335
 345

<210> 167
 <211> 669
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 167
 gtgaagctga aaagactgtt caagatcgga ctgctgccgg ccgtattgtt gtttagtgca 60
 acgcagcagt taaccgcgca aaccatctgc agcaaccaga ccggcaccac caacggctac 120
 ttctactcgt tctggaagga caccgggtcg gcgtgcatga cactgggttc cggcggcaac 180
 tacagcgtca actggaacct gggttccggg aacatgggtct gcggcaaagg ctggagtacc 240
 ggatcttcaa gccgcagaat cggctacaac gccggcgtct gggcgccgaa cggcaatgcc 300
 tacttgactc tgtatgggtg gaccaggaac ccgctcatcg agtactacgt ggtcgacagt 360
 tggggaagct ggaggccgcc aggcggaacc tccgcgggca ccgtcaatag cgatggcggg 420
 acctacaacc tctatcggac gcagcgggtc aacgcgcctt ccatcgacgg caccgggacg 480
 ttctatcagt actggagtgt ccggacctcg aagaggccca ccgggagcaa ccagaccatc 540
 accttcgca accacgtgaa tgcgtggagg agcaaagggt ggaatctggg ggtcacgtc 600
 taccagataa tggcaacaga gggatatcaa agcagcggga attccaacct gacgggtgtg 660
 gcgcagtag 669

<210> 168
 <211> 222
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(36)

<400> 168
 Val Lys Leu Lys Arg Leu Phe Lys Ile Gly Leu Leu Pro Ala Val Leu
 1 5 10 15
 Leu Phe Ser Ala Thr Gln Gln Leu Thr Ala Gln Thr Ile Cys Ser Asn
 20 25 30
 Gln Thr Gly Thr Asn Asn Gly Tyr Phe Tyr Ser Phe Trp Lys Asp Thr
 35 40 45
 Gly Ser Ala Cys Met Thr Leu Gly Ser Gly Gly Asn Tyr Ser Val Asn
 50 55 60
 Trp Asn Leu Gly Ser Gly Asn Met Val Cys Gly Lys Gly Trp Ser Thr
 65 70 75 80
 Gly Ser Ser Ser Arg Arg Ile Gly Tyr Asn Ala Gly Val Trp Ala Pro
 85 90 95
 Asn Gly Asn Ala Tyr Leu Thr Leu Tyr Gly Trp Thr Arg Asn Pro Leu
 100 105 110
 Ile Glu Tyr Tyr Val Val Asp Ser Trp Gly Ser Trp Arg Pro Pro Gly
 115 120 125
 Gly Thr Ser Ala Gly Thr Val Asn Ser Asp Gly Gly Thr Tyr Asn Leu
 130 135 140
 Tyr Arg Thr Gln Arg Val Asn Ala Pro Ser Ile Asp Gly Thr Arg Thr
 145 150 155 160
 Phe Tyr Gln Tyr Trp Ser Val Arg Thr Ser Lys Arg Pro Thr Gly Ser
 165 170 175
 Asn Gln Thr Ile Thr Phe Ala Asn His Val Asn Ala Trp Arg Ser Lys
 180 185 190
 Gly Trp Asn Leu Gly Ser His Val Tyr Gln Ile Met Ala Thr Glu Gly
 195 200 205
 Tyr Gln Ser Ser Gly Asn Ser Asn Leu Thr Val Trp Ala Gln
 210 215 220

<210> 169
 <211> 1041

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample

<400> 169

atgattgtta	gtttcaagag	cgtgaaggca	ctcgcgtgcc	tgcgccgtgct	cggcattacc	60
gccgcgcagg	cgcaaacctg	catcacttcc	agccagaccg	gtaccaacaa	cggcaactac	120
ttttccttct	ggaaggacag	cccgggtacc	gtcaacttct	gcatgtatgc	caatgggcgc	180
tacacctcca	actggagcgg	catcaacaac	tgggtgggcg	gcaagggctg	gcagacgggc	240
tccaaccgca	cggtgacctt	ctccggttcg	ttcaattcgc	ccggcaatgg	ctatctcacc	300
ttgtacggat	ggaccacgaa	tccattgatc	gagtactaca	tcgtcgacag	ctggggcacc	360
tatcgaccgc	cgggcggcca	gggcttcatt	ggcaccgtca	acagcgatgg	cggcacctat	420
gacatctacc	gcacgcagcg	cgtgaaccag	ccttccatca	tcggcaccgc	cacgttctac	480
cagtactgga	gcgtgcggca	gtcgaagcgc	gtcggcggca	cgatcaccac	ggccaaccac	540
ttcaacgcct	gggccacgct	gggcatgaac	ctgggccagc	acaactacca	ggtcatggcc	600
accgaggggt	accagagcag	tggcagctcc	gacatcaccg	tgaccgaggg	cggcggctcc	660
tcgtcgtacc	gtggcggcgg	cagcaccagc	agtggcggtg	gcggcagcaa	gagcttcacc	720
gtgcgtgcgc	gcggcagcgt	cggcggcgaa	aacatccagc	tgagggtcaa	caaccagacg	780
gtggcgagct	ggaacctgac	caccagcatg	cagaactaca	acgcctcgac	cagcctgagt	840
ggcggcatca	ccgtcgtgta	caccaatgac	agcggcagcc	gcgacgtgca	ggtggactac	900
atcgtcgtca	acggccagac	ccgccagtcc	gaagcccaga	gctacaacac	cgggctctat	960
gccaacggac	gttggtggtg	cggctcgaac	agcgagtggg	tgcatgtgca	cggcgcgatt	1020
ggctacggca	acacgcccta	g				1041

<210> 170

<211> 346

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample

<221> SIGNAL

<222> (1)...(24)

<400> 170

Met	Ile	Val	Ser	Phe	Lys	Ser	Val	Lys	Ala	Leu	Ala	Cys	Leu	Ala	Val
1				5					10					15	
Leu	Gly	Ile	Thr	Ala	Ala	Gln	Ala	Gln	Thr	Cys	Ile	Thr	Ser	Ser	Gln
			20					25					30		
Thr	Gly	Thr	Asn	Asn	Gly	Asn	Tyr	Phe	Ser	Phe	Trp	Lys	Asp	Ser	Pro
			35				40					45			
Gly	Thr	Val	Asn	Phe	Cys	Met	Tyr	Ala	Asn	Gly	Arg	Tyr	Thr	Ser	Asn
			50				55				60				
Trp	Ser	Gly	Ile	Asn	Asn	Trp	Val	Gly	Gly	Lys	Gly	Trp	Gln	Thr	Gly
65				70				75							80
Ser	Asn	Arg	Thr	Val	Thr	Tyr	Ser	Gly	Ser	Phe	Asn	Ser	Pro	Gly	Asn
				85				90						95	
Gly	Tyr	Leu	Thr	Leu	Tyr	Gly	Trp	Thr	Thr	Asn	Pro	Leu	Ile	Glu	Tyr
			100					105					110		
Tyr	Ile	Val	Asp	Ser	Trp	Gly	Thr	Tyr	Arg	Pro	Pro	Gly	Gly	Gln	Gly
			115				120					125			
Phe	Met	Gly	Thr	Val	Asn	Ser	Asp	Gly	Gly	Thr	Tyr	Asp	Ile	Tyr	Arg
						135					140				
Thr	Gln	Arg	Val	Asn	Gln	Pro	Ser	Ile	Ile	Gly	Thr	Ala	Thr	Phe	Tyr
145					150					155					160
Gln	Tyr	Trp	Ser	Val	Arg	Gln	Ser	Lys	Arg	Val	Gly	Gly	Thr	Ile	Thr
				165				170						175	
Thr	Ala	Asn	His	Phe	Asn	Ala	Trp	Ala	Thr	Leu	Gly	Met	Asn	Leu	Gly
			180					185					190		
Gln	His	Asn	Tyr	Gln	Val	Met	Ala	Thr	Glu	Gly	Tyr	Gln	Ser	Ser	Gly
			195				200					205			
Ser	Ser	Asp	Ile	Thr	Val	Thr	Glu	Gly	Gly	Gly	Ser	Ser	Ser	Ser	Ser
			210			215					220				
Gly	Gly	Gly	Ser	Thr	Ser	Ser	Gly	Gly	Gly	Gly	Ser	Lys	Ser	Phe	Thr
225					230				235						240
Val	Arg	Ala	Arg	Gly	Thr	Val	Gly	Gly	Glu	Asn	Ile	Gln	Leu	Gln	Val

Asn	Asn	Gln	Thr	Val	Ala	Ser	Trp	Asn	Leu	Thr	Thr	Ser	Met	Gln	Asn
			260	245				265	250				270		
Tyr	Asn	Ala	Ser	Thr	Ser	Leu	Ser	Gly	Gly	Ile	Thr	Val	Val	Tyr	Thr
		275					280					285			
Asn	Asp	Ser	Gly	Ser	Arg	Asp	Val	Gln	Val	Asp	Tyr	Ile	Val	Val	Asn
	290					295					300				
Gly	Gln	Thr	Arg	Gln	Ser	Glu	Ala	Gln	Ser	Tyr	Asn	Thr	Gly	Leu	Tyr
305					310					315					320
Ala	Asn	Gly	Arg	Cys	Gly	Gly	Gly	Ser	Asn	Ser	Glu	Trp	Met	His	Cys
				325					330					335	
Asn	Gly	Ala	Ile	Gly	Tyr	Gly	Asn	Thr	Pro						
			340					345							

<210> 171
 <211> 678
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 171																
atggagttga	aaaaaatatc	cagaaaagga	ctgccactag	tattcttgctc	cttggttggtg											60
ttcagtgtaa	cgcagcagtc	aaacgcccac	accatctgca	gcaatcaaac	tggcacaac											120
aacggtttct	tctattcgtt	ttggaaggac	accggatcag	catgcatgac	tttgggctct											180
ggcggcaatt	acgacgtaag	ttggaatctg	ggttctggga	atatggttgt	cggcaaaggc											240
tggagtaccg	gatcatcaac	caggagagta	ggctacaatg	ccggcatctg	gcagccgaac											300
ggcaatgcat	atttggctct	ctatgggtgg	acgagaaacc	cacttataga	atattacgtc											360
gttgatagct	ggggcacttt	caggccgcct	ggaggaacgt	caataggctc	cgtcaccact											420
gatggtggta	cataccaaat	atatcggacc	cagcgagtca	acgcgccttc	cattgacggc											480
gccagaactt	tttatcagta	ctggagtgtc	cggacctcga	agagaccgac	cgggagcaac											540
caaaccatca	cctttgcgaa	tcacgttaac	gcgtggagga	atctagggtt	gaatctgggg											600
agtcatgttt	accagataat	ggccacagag	ggatttcata	gcagtgggag	atctaacccta											660
acggtgtggt	cacagtaa															678

<210> 172
 <211> 225
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(29)

<400> 172																
Met	Glu	Leu	Lys	Lys	Ile	Ser	Arg	Lys	Gly	Leu	Pro	Leu	Val	Phe	Leu	
1				5					10					15		
Ser	Leu	Leu	Leu	Phe	Ser	Val	Thr	Gln	Gln	Ser	Asn	Ala	Gln	Thr	Ile	
			20					25					30			
Cys	Ser	Asn	Gln	Thr	Gly	Thr	Asn	Asn	Gly	Phe	Phe	Tyr	Ser	Phe	Trp	
		35					40					45				
Lys	Asp	Thr	Gly	Ser	Ala	Cys	Met	Thr	Leu	Gly	Ser	Gly	Gly	Asn	Tyr	
	50					55					60					
Asp	Val	Ser	Trp	Asn	Leu	Gly	Ser	Gly	Asn	Met	Val	Val	Gly	Lys	Gly	
65					70				75					80		
Trp	Ser	Thr	Gly	Ser	Ser	Thr	Arg	Arg	Val	Gly	Tyr	Asn	Ala	Gly	Ile	
				85					90					95		
Trp	Gln	Pro	Asn	Gly	Asn	Ala	Tyr	Leu	Ala	Leu	Tyr	Gly	Trp	Thr	Arg	
			100					105					110			
Asn	Pro	Leu	Ile	Glu	Tyr	Tyr	Val	Val	Asp	Ser	Trp	Gly	Thr	Phe	Arg	
		115					120					125				
Pro	Pro	Gly	Gly	Thr	Ser	Ile	Gly	Ser	Val	Thr	Thr	Asp	Gly	Gly	Thr	
	130					135					140					
Tyr	Gln	Ile	Tyr	Arg	Thr	Gln	Arg	Val	Asn	Ala	Pro	Ser	Ile	Asp	Gly	
145					150				155					160		
Ala	Arg	Thr	Phe	Tyr	Gln	Tyr	Trp	Ser	Val	Arg	Thr	Ser	Lys	Arg	Pro	

165 170 175
 Thr Gly Ser Asn Gln Thr Ile Thr Phe Ala Asn His Val Asn Ala Trp
 180 185 190
 Arg Asn Leu Gly Leu Asn Leu Gly Ser His Val Tyr Gln Ile Met Ala
 195 200 205
 Thr Glu Gly Phe His Ser Ser Gly Arg Ser Asn Leu Thr Val Trp Ser
 210 215 220
 Gln
 225

<210> 173
 <211> 1503
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 173
 ttgaaaaaac tcgcagctgc cttatcactt gcaattacct ttgccgtacc gacaatagta 60
 caagcacaag gtcccatatg gactaccagc acaatacaga aatacaacaa ctacgactat 120
 gaactctgga atgaaaacaa tcagggtacc gtttccatga agctcacagg agataacggt 180
 accgctgcca atgcggtagg cggaacggtt gactctactt ggagtggtag aaagaatgtg 240
 cttttccggt ccggcagaaa gtttaccggt acttcagggc aaagcgttga tgggtggcgg 300
 gctggcaaaa ccgctagtgc ttacggcaat ataagcatta acttcgccgc tacgtgggtct 360
 tccggtgacg atgtgaagat gcttggcgta tatgggtggg cgttttacgc actgccaagt 420
 gtaccagaca aacaggaaaa cggcacttct actaattttt ccaatcaaat agaatactac 480
 atcattcaag accgcggcag ctataactcg gctacagggt gcaccaactc aaagaaatc 540
 ggtgaggcta ccatgacgg cattgcttat gagttccgtg tatgtgatag aatagggcaa 600
 cctatgttaa ctggcaacgg gaatttttaag cagtatttca gtgttcctaa aagcactata 660
 aaccaccgca ccagcggtag aatctctgtt tccaaacact ttgaagaatg ggaaaaagtc 720
 ggcattgaaa tggacgggtc cttatacgaa gtacgcgatg aagttgaatc ctattctggc 780
 aatgggaata gtaacggcaa tgctaaaatt ttttgacatc tggcgggaaca 840
 accacaactc aaagcagttc aagcggaggt tcaacgggtc cagatgaatg tggcgaatat 900
 aaaaagagtt tctgtgggtg cttgggatat ggaagcgtat attccaattt aaccgcaata 960
 ccctcaacgg gcgactgctt atacatcgga gattttgaag taatccagcc agctttgaat 1020
 tcaaccgttg ccataaacgg tgtggaaaat acctgcggaa gcgagtgggtc agattgccct 1080
 tacaatgata aacccgattc aaaaaaagat ggcggctatt atgtttatgt gaaaacaggc 1140
 tcaattaaca attatgagaa taacggttgg caaaacattg tagctaaagc aaaaccggct 1200
 tgcacaccac cttctagcag ttccgggtgt gcaccagggt cttcttcttc agacgaagaa 1260
 gacccagagc caattttgaa aaatcgcat cctataactc atttttccct tcaaacgctt 1320
 agcgataaag ccttgcgcat agaagtaaat gctccaacta ttgtggacat ttttgacctg 1380
 agaggggaata aggttaaaag tttgaatgtt tacgggttcgc aaagggttaa attatccctg 1440
 ccgagcgggg tgtattttgc caaagtgcgc gggatgaaaa gcgttagatt tgtgttgagg 1500
 taa 1503

<210> 174
 <211> 500
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(22)

<400> 174
 Leu Lys Lys Leu Ala Ala Ala Leu Ser Leu Ala Ile Thr Phe Ala Val
 1 5 10 15
 Pro Thr Ile Val Gln Ala Gln Gly Pro Thr Trp Thr Thr Ser Thr Ile
 20 25 30
 Gln Lys Tyr Asn Asn Tyr Asp Tyr Glu Leu Trp Asn Glu Asn Asn Gln
 35 40 45
 Gly Thr Val Ser Met Lys Leu Thr Gly Asp Asn Gly Thr Ala Ala Asn
 50 55 60
 Ala Val Gly Gly Thr Phe Glu Ser Thr Trp Ser Gly Thr Lys Asn Val
 65 70 75 80
 Leu Phe Arg Ser Gly Arg Lys Phe Thr Gly Thr Ser Gly Gln Ser Val

Asp	Gly	Gly	Gly	Ala	Gly	Lys	Thr	Ala	Ser	Ala	Tyr	Gly	Asn	Ile	Ser
Ile	Asn	Phe	Ala	Ala	Thr	Trp	Ser	Ser	Gly	Asp	Asp	Val	Lys	Met	Leu
Gly	Val	Tyr	Gly	Trp	Ala	Phe	Tyr	Ala	Leu	Pro	Ser	Val	Pro	Asp	Lys
Gln	Glu	Asn	Gly	Thr	Ser	Thr	Asn	Phe	Ser	Asn	Gln	Ile	Glu	Tyr	Tyr
Ile	Ile	Gln	Asp	Arg	Gly	Ser	Tyr	Asn	Ser	Ala	Thr	Gly	Gly	Thr	Asn
Ser	Lys	Lys	Tyr	Gly	Glu	Ala	Thr	Ile	Asp	Gly	Ile	Ala	Tyr	Glu	Phe
Arg	Val	Cys	Asp	Arg	Ile	Gly	Gln	Pro	Met	Leu	Thr	Gly	Asn	Gly	Asn
Phe	Lys	Gln	Tyr	Phe	Ser	Val	Pro	Lys	Ser	Thr	Ile	Asn	His	Arg	Thr
Ser	Gly	Thr	Ile	Ser	Val	Ser	Lys	His	Phe	Glu	Glu	Trp	Glu	Lys	Val
Gly	Met	Lys	Met	Asp	Gly	Pro	Leu	Tyr	Glu	Val	Ala	Met	Lys	Val	Glu
Ser	Tyr	Ser	Gly	Asn	Gly	Asn	Ser	Asn	Gly	Asn	Ala	Lys	Ile	Thr	Lys
Asn	Ile	Leu	Thr	Ile	Gly	Gly	Thr	Thr	Thr	Gln	Ser	Ser	Ser	Ser	Ser
Gly	Gly	Ser	Thr	Val	Pro	Asp	Glu	Cys	Gly	Glu	Tyr	Lys	Lys	Ser	Phe
Cys	Gly	Gly	Leu	Gly	Tyr	Gly	Ser	Val	Tyr	Ser	Asn	Leu	Thr	Ala	Ile
Pro	Ser	Thr	Gly	Asp	Cys	Leu	Tyr	Ile	Gly	Asp	Phe	Glu	Val	Ile	Gln
Pro	Ala	Leu	Asn	Ser	Thr	Val	Ala	Ile	Asn	Gly	Val	Glu	Asn	Thr	Cys
Gly	Ser	Glu	Trp	Ser	Asp	Cys	Pro	Tyr	Asn	Asp	Lys	Pro	Asp	Ser	Lys
Lys	Asp	Gly	Gly	Tyr	Tyr	Val	Tyr	Val	Lys	Thr	Gly	Ser	Ile	Asn	Asn
Tyr	Glu	Asn	Asn	Gly	Trp	Gln	Asn	Ile	Val	Ala	Lys	Ala	Lys	Pro	Ala
Cys	Thr	Pro	Pro	Ser	Ser	Ser	Ser	Gly	Ala	Ala	Pro	Gly	Ser	Ser	Ser
Ser	Asp	Glu	Glu	Asp	Pro	Glu	Pro	Ile	Leu	Lys	Asn	Arg	Ile	Pro	Ile
Thr	His	Phe	Ser	Leu	Gln	Thr	Leu	Ser	Asp	Lys	Ala	Leu	Arg	Ile	Glu
Val	Asn	Ala	Pro	Thr	Ile	Val	Asp	Ile	Phe	Asp	Leu	Arg	Gly	Asn	Lys
Val	Lys	Ser	Leu	Asn	Val	Tyr	Gly	Ser	Gln	Arg	Val	Lys	Leu	Ser	Leu
Pro	Ser	Gly	Val	Tyr	Phe	Ala	Lys	Val	Arg	Gly	Met	Lys	Ser	Val	Arg
Phe	Val	Leu	Arg												

<210> 175
 <211> 1053
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 175																			
atgaagtcca	ttcgcagccg	cagcctcgcc	accgccgtcc	tggctggcgc	cctcggcgtc														60
gcagccgcag	gcgcgcaggc	gcagacgctc	aacaacaatt	ccaccggcac	gcacgacggc														120
tactactaca	cgttctggaa	ggactcgggc	agcgcctcga	tgaccctcca	tccgggcgga														180
cgctacagct	cccagtggac	cagcaacacc	aacaactggg	tcggcgggaa	aggctggaat														240
cccgggtggc	cgcgctgggt	caactactcg	ggctactacg	gggtcaacaa	cagccagaac														300
tcctacctgg	cgctgtacgg	ctggacccgc	aatccgctgg	tcgagtacta	cgtgatcgag														360

agctacggct	cctacaaccc	ggccagttgc	gccggcgggg	tggactacgg	cagcttccag	420
agcgatggcg	ccacctataa	cgtacgtcgc	tgcctgcgcc	agaacgcgcc	gtcgatcgaa	480
ggcaacaaca	gcaccttcta	ccagtacttc	agcgtgcgca	atcccaagaa	gggattcggc	540
aacatctccg	gcacgatcac	cgtcgccaac	cacttcaact	actggggccag	ccgcggcctc	600
aacctcggca	accacgacta	catggtgttc	gccaccgagg	gctaccagag	ccagggcagc	660
agcgacatca	ccgtgagttc	gggtaccggc	ggcgggcggtg	gcggcgga	cacgggcagc	720
aagaccatcg	tggtgcgcgc	gcgcggcacc	gccggcgggag	agaacatctc	gctcaaggtc	780
aacaacgcc	ccatcgccag	ctggacgctc	accaccagca	tgccaacta	cacggccacc	840
acctcggcat	cgggcggctc	gctggtggag	ttcaccaacg	acggcgga	ccgcgacgtg	900
caggtggact	acctcagcgt	caatggcgcc	gtccgccagg	ccgaggacca	gacctacaac	960
accggcggtg	accagaacgg	ccagtgcggc	ggcggaacg	gccgcagcga	atggctgcac	1020
tgcaacgggtg	ccatcggtt	cggaaatctc	tga			1053

<210> 176

<211> 350

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample

<221> SIGNAL

<222> (1)...(27)

<400> 176

Met	Lys	Ser	Ile	Arg	Ser	Arg	Ser	Leu	Ala	Thr	Ala	Val	Leu	Ala	Gly
1				5					10					15	
Ala	Leu	Gly	Val	Ala	Ala	Ala	Gly	Ala	Gln	Ala	Gln	Thr	Leu	Asn	Asn
			20					25					30		
Asn	Ser	Thr	Gly	Thr	His	Asp	Gly	Tyr	Tyr	Tyr	Thr	Phe	Trp	Lys	Asp
		35					40					45			
Ser	Gly	Ser	Ala	Ser	Met	Thr	Leu	His	Pro	Gly	Gly	Arg	Tyr	Ser	Ser
	50					55					60				
Gln	Trp	Thr	Ser	Asn	Thr	Asn	Asn	Trp	Val	Gly	Gly	Lys	Gly	Trp	Asn
65					70				75					80	
Pro	Gly	Gly	Pro	Arg	Val	Val	Asn	Tyr	Ser	Gly	Tyr	Tyr	Gly	Val	Asn
				85					90					95	
Asn	Ser	Gln	Asn	Ser	Tyr	Leu	Ala	Leu	Tyr	Gly	Trp	Thr	Arg	Asn	Pro
			100				105						110		
Leu	Val	Glu	Tyr	Tyr	Val	Ile	Glu	Ser	Tyr	Gly	Ser	Tyr	Asn	Pro	Ala
	115						120					125			
Ser	Cys	Ala	Gly	Gly	Val	Asp	Tyr	Gly	Ser	Phe	Gln	Ser	Asp	Gly	Ala
	130					135					140				
Thr	Tyr	Asn	Val	Arg	Arg	Cys	Leu	Arg	Gln	Asn	Ala	Pro	Ser	Ile	Glu
145					150					155					160
Gly	Asn	Asn	Ser	Thr	Phe	Tyr	Gln	Tyr	Phe	Ser	Val	Arg	Asn	Pro	Lys
				165					170					175	
Lys	Gly	Phe	Gly	Asn	Ile	Ser	Gly	Thr	Ile	Thr	Val	Ala	Asn	His	Phe
		180					185						190		
Asn	Tyr	Trp	Ala	Ser	Arg	Gly	Leu	Asn	Leu	Gly	Asn	His	Asp	Tyr	Met
	195						200					205			
Val	Phe	Ala	Thr	Glu	Gly	Tyr	Gln	Ser	Gln	Gly	Ser	Ser	Asp	Ile	Thr
	210					215				220					
Val	Ser	Ser	Gly	Thr	Gly	Gly	Gly	Gly	Gly	Gly	Asn	Thr	Gly	Ser	
225					230				235					240	
Lys	Thr	Ile	Val	Val	Arg	Ala	Arg	Gly	Thr	Ala	Gly	Gly	Glu	Asn	Ile
			245						250				255		
Ser	Leu	Lys	Val	Asn	Asn	Ala	Thr	Ile	Ala	Ser	Trp	Thr	Leu	Thr	Thr
			260					265					270		
Ser	Met	Ala	Asn	Tyr	Thr	Ala	Thr	Thr	Ser	Ala	Ser	Gly	Gly	Ser	Leu
	275						280					285			
Val	Glu	Phe	Thr	Asn	Asp	Gly	Gly	Asn	Arg	Asp	Val	Gln	Val	Asp	Tyr
	290					295					300				
Leu	Ser	Val	Asn	Gly	Ala	Val	Arg	Gln	Ala	Glu	Asp	Gln	Thr	Tyr	Asn
305					310					315					320
Thr	Gly	Val	Tyr	Gln	Asn	Gly	Gln	Cys	Gly	Gly	Gly	Asn	Gly	Arg	Ser
				325					330					335	
Glu	Trp	Leu	His	Cys	Asn	Gly	Ala	Ile	Gly	Phe	Gly	Asn	Leu		
			340					345					350		

<210> 177
 <211> 1299
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 177
 atgaaattgt tgaaaacgca caggcgtgcg attgctgccg cagcactagc ggtggcgact 60
 gticcaatcg ctcatgcgca aacgcctagc tcaaatgccca ctggaaccca gaatgggtac 120
 tactattcgt tttggaagga ttccggtaac gccaccatga cactcgggtg cggtggaaac 180
 tatttttcat cctggaacag cagcactaac aactgggttg gcggtaaagg ctggatgccg 240
 ggtactcggc gcacagtcac ctattcgggc agttatagcg cgagtgggaa cagctacctc 300
 gcacttttac gctggactcg aaacccgctg atcgaatatt acattgtcga aaactgggtc 360
 aattacaatc ctgctgccgg cgcaacgaat tatgggactg tcaatattga cggcagcacc 420
 taccagctgg gccgcagcca acgggttaat cagccatcta ttgaaggcac ggccacgttc 480
 taccataact ggagtgtcgc ccaaaacaag cgaccagcg gaacgattaa tattggagcg 540
 catttcgatg catgggctgc tgtgggcttg aacctgggga ctacagatta tcagattatg 600
 gcgaccgagg gctaccagag cagcggccag tccaatatca cggtgagcga aggcagtagc 660
 ggcagcacga cttcgagcac atccagctcc agctcaagta cgagttccag tagttcttcc 720
 agcagttctt ccggcggcgg cacaggaagt tgtgccggag tgaatgtgta cccaattgg 780
 accgcacgcg actgggtctg cggcgcatat aatcacgcca atgccgggtg ccaaatggtc 840
 tatcaaaaca atttgtaccg ggcaaacttg tacaccaact ccacgcctgg aagcgatgcc 900
 tcctggacca gtctcgggtc ctgtagcggc ggcggttagc ccagttcaac aacgagctcc 960
 tccagttcct cttccacctc ggcgtcgagc agctccaact catccagcag cagttcaagc 1020
 agctccagca gcggtggctg tcgggaaatg tgtaactggt acggacaggg tatgtatcct 1080
 ctgtgtcaga acaccagcgg ttggggatgg gaaaataacc agaactgtat cggtcgccaa 1140
 acctgtcaaa gtcagaacgg cggctccggg ggtgtggtga acagctgtgg taccagcagc 1200
 tcttcgtcca gtagcacctc ctcatcgagc agttcaagtt cgctcagtggt caccacgtca 1260
 tcgtcctccg gaattcctgc agcccggggg atccactag 1299

<210> 178
 <211> 432
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(26)

<400> 178
 Met Lys Leu Leu Lys Thr His Arg Arg Ala Ile Ala Ala Ala Ala Leu
 1 5 10 15
 Ala Val Ala Thr Val Pro Ile Ala His Ala Gln Thr Leu Ser Ser Asn
 20 25 30
 Ala Thr Gly Thr Gln Asn Gly Tyr Tyr Tyr Ser Phe Trp Lys Asp Ser
 35 40 45
 Gly Asn Ala Thr Met Thr Leu Gly Ala Gly Gly Asn Tyr Ser Ser Ser
 50 55 60
 Trp Asn Ser Ser Thr Asn Trp Val Gly Gly Lys Gly Trp Met Pro
 65 70 75 80
 Gly Thr Arg Arg Thr Val Thr Tyr Ser Gly Ser Tyr Ser Ala Ser Gly
 85 90 95
 Thr Ser Tyr Leu Ala Leu Tyr Gly Trp Thr Arg Asn Pro Leu Ile Glu
 100 105 110
 Tyr Tyr Ile Val Glu Asn Trp Val Asn Tyr Asn Pro Ala Ser Gly Ala
 115 120 125
 Thr Asn Tyr Gly Thr Val Asn Ile Asp Gly Ser Thr Tyr Gln Leu Gly
 130 135 140
 Arg Ser Gln Arg Val Asn Gln Pro Ser Ile Glu Gly Thr Ala Thr Phe
 145 150 155 160
 Tyr Gln Tyr Trp Ser Val Arg Gln Asn Lys Arg Thr Ser Gly Thr Ile
 165 170 175
 Asn Ile Gly Ala His Phe Asp Ala Trp Ala Ala Val Gly Leu Asn Leu
 180 185 190

Gly Thr His Asp Tyr Gln Ile Met Ala Thr Glu Gly Tyr Gln Ser Ser
 195 200 205
 Gly Gln Ser Asn Ile Thr Val Ser Glu Gly Ser Ser Gly Ser Thr Thr
 210 215 220
 Ser Ser Thr Ser Ser Ser Ser Ser Thr Ser Ser Ser Ser Ser
 225 230 235 240
 Ser Ser Ser Ser Gly Gly Gly Thr Gly Ser Cys Ala Gly Val Asn Val
 245 250 255
 Tyr Pro Asn Trp Thr Ala Arg Asp Trp Ser Gly Gly Ala Tyr Asn His
 260 265 270
 Ala Asn Ala Gly Asp Gln Met Val Tyr Gln Asn Asn Leu Tyr Arg Ala
 275 280 285
 Asn Trp Tyr Thr Asn Ser Thr Pro Gly Ser Asp Ala Ser Trp Thr Ser
 290 295 300
 Leu Gly Ser Cys Ser Gly Gly Gly Ser Thr Ser Ser Thr Thr Ser Ser
 305 310 315 320
 Ser Ser Ser Ser Ser Thr Ser Ala Ser Ser Ser Ser Asn Ser Ser Ser
 325 330 335
 Ser Ser Ser Ser Ser Ser Ser Ser Gly Gly Cys Arg Glu Met Cys Asn
 340 345 350
 Trp Tyr Gly Gln Gly Met Tyr Pro Leu Cys Gln Asn Thr Ser Gly Trp
 355 360 365
 Gly Trp Glu Asn Asn Gln Asn Cys Ile Gly Arg Gln Thr Cys Gln Ser
 370 375 380
 Gln Asn Gly Gly Ser Gly Gly Val Val Asn Ser Cys Gly Thr Ser Ser
 385 390 395 400
 Ser Ser Ser Ser Ser Thr Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser
 405 410 415
 Gly Thr Thr Ser Ser Ser Ser Gly Ile Pro Ala Ala Arg Gly Ile His
 420 425 430

<210> 179
 <211> 852
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 179
 atgaagaatt ggccggaac gggtattata ttattattgg cgggcggcct tttggcggct 60
 tgtttgacgg gcaaacggca agaggggcaa aaagtggatc cggataactca aaacgagaaa 120
 ttgacaggcg ggaccgtgtt tacagctaac agcaggggga acaggcccct ggaagggttcg 180
 ctttatggtt acgaaatgtg gacgcagggc ggggaataata acaagcttgt ttggttcggg 240
 ccggatcagg ggggaggggc ggctttcagg gcagaatgga acgagccgga tgattttttg 300
 ggacgactgg gtttctggtg gggaaacggc gggcaattta aagaatataa aaatatgtac 360
 gcggtattca attacacaag gtcggggcgc ggcaccggcg gcagttattc ttatataggc 420
 atttacggct gggcgagaaa cccgaacgcc gcgaacgagg aagacagggt aatagaatac 480
 tatattgtgg acgactggtt cgggaatcaa tggcagtccg acgacacccc cattaccaca 540
 agaacaacag gaggctcgtt attgggtacc attatagcgg acggcgcgtt ttacaacgtc 600
 gtcaggaatg tgagaaccca aaagccttcg atagacggca tcaaaacatt cgccaatac 660
 ttcagcatac gccaaacacc gcgccaagc gggacaatct ccatcaccga acatttcaaa 720
 caatgggaaa gcatgggcct gaagctcggg aatatgtacg aggcataaatt cctggtagaa 780
 gccggcggcg gcaccggctg gctggagttt acgtatctta aactgacgca ggaagaaaaa 840
 aaagaaatt ag 852

<210> 180
 <211> 283
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(19)

<400> 180
 Met Lys Asn Trp Pro Gly Thr Gly Ile Ile Leu Leu Leu Ala Gly Gly
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1 5 10 15
 Leu Leu Ala Ala Cys Leu Thr Gly Lys Arg Gln Glu Gly Gln Lys Val
 Asp Pro Asp 20 Thr Gln Asn Glu Lys 25 Leu Thr Gly Gly Thr Val Phe Thr
 Ala Asn Ser Arg Gly Asn Arg Pro Leu Glu Gly Ser Pro Tyr Gly Tyr
 50 55 60
 Glu Met Trp Thr Gln Gly Gly Asn Asn Asn Lys Leu Val Trp Phe Gly
 65 70 75 80
 Pro Asp Gln Gly Gly Ala Ala Phe Arg Ala Glu Trp Asn Glu Pro
 85 90 95
 Asp Asp Phe Leu Gly Arg Leu Gly Phe Trp Trp Gly Asn Gly Gly Gln
 100 105 110
 Phe Lys Glu Tyr Lys Asn Met Tyr Ala Asp Phe Asn Tyr Thr Arg Ser
 115 120 125
 Gly Arg Gly Thr Gly Gly Ser Tyr Ser Tyr Ile Gly Ile Tyr Gly Trp
 130 135 140
 Ala Arg Asn Pro Asn Ala Asn Glu Glu Asp Arg Leu Ile Glu Tyr
 145 150 155 160
 Tyr Ile Val Asp Asp Trp Phe Gly Asn Gln Trp Gln Ser Asp Asp Thr
 165 170 175
 Pro Ile Thr Thr Arg Thr Thr Gly Gly Ser Val Leu Gly Thr Ile Ile
 180 185 190
 Ala Asp Gly Ala Phe Tyr Asn Val Val Arg Asn Val Arg Thr Gln Lys
 195 200 205
 Pro Ser Ile Asp Gly Ile Lys Thr Phe Ala Gln Tyr Phe Ser Ile Arg
 210 215 220
 Gln Thr Pro Arg Gln Ser Gly Thr Ile Ser Ile Thr Glu His Phe Lys
 225 230 235 240
 Gln Trp Glu Ser Met Gly Leu Lys Leu Gly Asn Met Tyr Glu Ala Lys
 245 250 255
 Phe Leu Val Glu Ala Gly Gly Gly Thr Gly Trp Leu Glu Phe Thr Tyr
 260 265 270
 Leu Lys Leu Thr Gln Glu Glu Lys Lys Arg Asn
 275 280

<210> 181
 <211> 1077
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 181
 atgaacttca gtctcaggaa ggctgcagcg gcgctggcctt gcgtcgcggg cctgtatgca 60
 tcatcggcgg gcgctcagac ctgcctgacc aacaaccaga ccggcaacaa cggcgggtac 120
 tactactcgt tctggaagga cagcggcaac gtcaccttct gcctgcagtc cggcgggcga 180
 tacacgtccc agtggagcaa cgtcaacaac tgggtgggcg gcaagggctg gaaccgggt 240
 gggcgacgca ccgtcaccta ttccggcacc tacaacccca atggcaattc gtacctgacc 300
 ctgtacggct ggaccacgaa tccactgggtc gactactaca tcgtcgacag ctggggttcc 360
 tggcgccac cgggctcggg atacatgggc acggtcacca gcgatggcgg cacctacgac 420
 atctatcgca cgcagcgtgt gaaccagcct tccatcatcg gcaccgcgac gttctaccaa 480
 tactggagcg tgcggcaatc gaagcgcgtg ggtggcacca tcacctcggg caatcacttc 540
 gatgcctggg cctcgctggg catgaacctc ggcacgcaca actacatggt gatggccacc 600
 gagggctacc agagcagcgg cagctcggac atcacgggtg gcagcggcag ttcgtcgtcg 660
 agcagcagct cgtccagcag tagcagctcg tcgtccagta gcagcagcag ttcttcgtcc 720
 agcagcagcg gtggcggcgg caccaagagc ttcaccgtgc gcgcacgcgg cacggcgggt 780
 ggcgagtcga tcaccttgcg ggtgaacaac cagaacgtgc agacctggac gctgggcacc 840
 agcatgcaga actacacggc gtccacctcg ctgagcggcg gcatcacggt ggccttcacc 900
 aacgacggcg gcaaccgcga cgtccaggtg gattacatca tcgtgaatgg ccagacgcgc 960
 cagtccgagg cgcagacctt caacaccggc ctgtatgcca atggccgctg cggtggtggc 1020
 tctaacagcg agtggatgca ctgcaacggc gccatcggct acggcaacac gccctag 1077

<210> 182
 <211> 358
 <212> PRT
 <213> Unknown

<220>

<223> obtained from an environmental sample

<221> SIGNAL

<222> (1)...(25)

<400> 182

Met Asn Phe Ser Leu Arg Lys Ala Ala Ala Leu Ala Cys Val Ala
 1 5 10 15
 Gly Leu Tyr Ala Ser Ser Ala Gly Ala Gln Thr Cys Leu Thr Asn Asn
 20 25 30
 Gln Thr Gly Asn Asn Gly Gly Tyr Tyr Tyr Ser Phe Trp Lys Asp Ser
 35 40 45
 Gly Asn Val Thr Phe Cys Leu Gln Ser Gly Gly Arg Tyr Thr Ser Gln
 50 55 60
 Trp Ser Asn Val Asn Asn Trp Val Gly Gly Lys Gly Trp Asn Pro Gly
 65 70 75 80
 Gly Arg Arg Thr Val Thr Tyr Ser Gly Thr Tyr Asn Pro Asn Gly Asn
 85 90 95
 Ser Tyr Leu Thr Leu Tyr Gly Trp Thr Thr Asn Pro Leu Val Glu Tyr
 100 105 110
 Tyr Ile Val Asp Ser Trp Gly Ser Trp Arg Pro Pro Gly Ser Gly Tyr
 115 120 125
 Met Gly Thr Val Thr Ser Asp Gly Gly Thr Tyr Asp Ile Tyr Arg Thr
 130 135 140
 Gln Arg Val Asn Gln Pro Ser Ile Ile Gly Thr Ala Thr Phe Tyr Gln
 145 150 155 160
 Tyr Trp Ser Val Arg Gln Ser Lys Arg Val Gly Gly Thr Ile Thr Ser
 165 170 175
 Gly Asn His Phe Asp Ala Trp Ala Ser Leu Gly Met Asn Leu Gly Thr
 180 185 190
 His Asn Tyr Met Val Met Ala Thr Glu Gly Tyr Gln Ser Ser Gly Ser
 195 200 205
 Ser Asp Ile Thr Val Gly Ser Gly Ser Ser Ser Ser Ser Ser Ser
 210 215 220
 Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser
 225 230 235 240
 Ser Ser Ser Gly Gly Gly Gly Thr Lys Ser Phe Thr Val Arg Ala Arg
 245 250 255
 Gly Thr Ala Gly Gly Glu Ser Ile Thr Leu Arg Val Asn Asn Gln Asn
 260 265 270
 Val Gln Thr Trp Thr Leu Gly Thr Ser Met Gln Asn Tyr Thr Ala Ser
 275 280 285
 Thr Ser Leu Ser Gly Gly Ile Thr Val Ala Phe Thr Asn Asp Gly Gly
 290 295 300
 Asn Arg Asp Val Gln Val Asp Tyr Ile Ile Val Asn Gly Gln Thr Arg
 305 310 315 320
 Gln Ser Glu Ala Gln Thr Tyr Asn Thr Gly Leu Tyr Ala Asn Gly Arg
 325 330 335
 Cys Gly Gly Gly Ser Asn Ser Glu Trp Met His Cys Asn Gly Ala Ile
 340 345 350
 Gly Tyr Gly Asn Thr Pro
 355

<210> 183

<211> 1083

<212> DNA

<213> unknown

<220>

<223> obtained from an environmental sample

<400> 183

atgatcgaag	gtctcaggag	acctgccttc	agtggcagga	gcatcgtcaa	ggcattgctc	60
tgcgtcgcgg	ccctgtatgc	atcggcggcg	caggcgcaga	cctgtctcag	ttcgagccag	120
accggcacca	acaacggctt	ctactattcg	ttctggaagg	acagcccggg	cagcgtgcag	180
ttctgcatgt	attccggcgg	ccgctacaca	tccaactgga	gcggcatcaa	caactgggtc	240
ggcggcaagg	ggtggcagac	cggcgctcgc	cgctgggtca	gctactcggg	cacgttcaat	300
tcaccgggca	acggctacct	ggcgctgtac	ggctggacca	ccaatccact	ggtcgagtac	360

tacatcgctcg	acaactgggg	cacctatcgc	ccgccggggc	gcacgggatt	ccagggcacg	420
gtgaccagtg	acggcggtac	ctacgacatc	taccggaccg	agcgaccaa	cgcgccctgc	480
atcaccggca	acaactgcaa	cttctcgag	ttctggagcg	tgcggcagtc	gaagcgcacc	540
ggcggcacca	tcaccaccgg	caatcacttc	agcgccctgg	cgtcgcacgg	catgaacatg	600
ggccagcaca	actaccagat	catggccacc	gagggttacc	agagcaacgg	cagctcggac	660
atcacggtct	cggaaggcag	cagttcgtcg	agcagcagca	gttcgtcctc	ttcgtcgagc	720
agcagctcgt	cgagcggcgg	cggcggcagc	aagagcttca	cggtgcgcgc	ccgcggcacc	780
gcgggtggcg	agcagatccg	gctgcgcgtg	aacaatacga	ccgtgcagac	ctggacgctg	840
aacaccacga	tgacgaacta	caccgcttcg	accacgctga	gcggcggcat	cacggtggag	900
tacttcaacg	acagcaccaa	tcacgacgtg	caggtggact	acatcatcgt	gaacggcgcg	960
acgcgccagt	ccgaagcgca	gagctacaac	accggcctgt	atgccaacgg	ccgttgcggt	1020
ggcgggtcca	acagcgaatg	gatgcattgc	aatggcgcca	tcggctacgg	caacactcca	1080
taa						1083

<210> 184

<211> 360

<212> PRT

<213> Unknown

<220>

<223> obtained from an environmental sample

<221> SIGNAL

<222> (1)...(32)

<400> 184

Met	Ile	Glu	Gly	Leu	Arg	Arg	Pro	Ala	Phe	Ser	Gly	Arg	Ser	Ile	Val
1				5					10					15	
Lys	Ala	Leu	Leu	Cys	Val	Ala	Ala	Leu	Tyr	Ala	Ser	Ala	Ala	Gln	Ala
			20					25					30		
Gln	Thr	Cys	Leu	Ser	Ser	Ser	Gln	Thr	Gly	Thr	Asn	Asn	Gly	Phe	Tyr
		35					40					45			
Tyr	Ser	Phe	Trp	Lys	Asp	Ser	Pro	Gly	Ser	Val	Gln	Phe	Cys	Met	Tyr
	50					55					60				
Ser	Gly	Gly	Arg	Tyr	Thr	Ser	Asn	Trp	Ser	Gly	Ile	Asn	Asn	Trp	Val
65					70				75					80	
Gly	Gly	Lys	Gly	Trp	Gln	Thr	Gly	Ala	Ser	Arg	Val	Val	Ser	Tyr	Ser
			85					90						95	
Gly	Thr	Phe	Asn	Ser	Pro	Gly	Asn	Gly	Tyr	Leu	Ala	Leu	Tyr	Gly	Trp
			100					105					110		
Thr	Thr	Asn	Pro	Leu	Val	Glu	Tyr	Ile	Val	Asp	Asn	Trp	Gly	Thr	
		115					120				125				
Tyr	Arg	Pro	Pro	Gly	Gly	Thr	Gly	Phe	Gln	Gly	Thr	Val	Thr	Ser	Asp
	130					135					140				
Gly	Gly	Thr	Tyr	Asp	Ile	Tyr	Arg	Thr	Glu	Arg	Thr	Asn	Ala	Pro	Cys
145					150				155					160	
Ile	Thr	Gly	Asn	Asn	Cys	Asn	Phe	Ser	Gln	Phe	Trp	Ser	Val	Arg	Gln
			165					170						175	
Ser	Lys	Arg	Thr	Gly	Gly	Thr	Ile	Thr	Gly	Asn	His	Phe	Ser	Ala	
		180					185					190			
Trp	Ala	Ser	His	Gly	Met	Asn	Met	Gly	Gln	His	Asn	Tyr	Gln	Ile	Met
	195					200						205			
Ala	Thr	Glu	Gly	Tyr	Gln	Ser	Asn	Gly	Ser	Ser	Asp	Ile	Thr	Val	Ser
	210					215					220				
Glu	Gly	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser
225					230				235					240	
Ser	Ser	Ser	Ser	Ser	Gly	Gly	Gly	Gly	Ser	Lys	Ser	Phe	Thr	Val	Arg
			245						250					255	
Ala	Arg	Gly	Thr	Ala	Gly	Gly	Glu	Gln	Ile	Arg	Leu	Arg	Val	Asn	Asn
			260				265						270		
Thr	Thr	Val	Gln	Thr	Trp	Thr	Leu	Asn	Thr	Thr	Met	Thr	Asn	Tyr	Thr
		275					280					285			
Ala	Ser	Thr	Thr	Leu	Ser	Gly	Ile	Thr	Val	Glu	Tyr	Phe	Asn	Asp	
	290					295				300					
Ser	Thr	Asn	His	Asp	Val	Gln	Val	Asp	Tyr	Ile	Ile	Val	Asn	Gly	Ala
305					310				315					320	
Thr	Arg	Gln	Ser	Glu	Ala	Gln	Ser	Tyr	Asn	Thr	Gly	Leu	Tyr	Ala	Asn
			325						330					335	
Gly	Arg	Cys	Gly	Gly	Gly	Ser	Asn	Ser	Glu	Trp	Met	His	Cys	Asn	Gly

Ala Ile Gly Tyr Gly Asn Thr Pro
 355 340 345 350 360

<210> 185
 <211> 684
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 185
 atgaatttga aaagattgag gctgttgttt gtgatgtgta ttggatttgt gctgacactg 60
 acggctgtgc cagctcatgc ggaaacgatt tatgataata ggatagggac acacagcgga 120
 tacgattttg aattatggaa ggattacgga aatacctcga tgacactcaa taacggcggg 180
 gcattttagt caagctggaa caatattgga aatgccttat ttcgaaaagg aaagaagttt 240
 gattccacta aaactcatca tcaacttggc aacatctcca tcaactacaa cgcagccttt 300
 aaccggggtc ggaattccta tttatgtgtc tatggctgga cacaatctcc attagctgaa 360
 tactacattg ttgagtcatt gggcacatat cgtccaacag gaacgtataa aggatcattt 420
 tatgccgatg gaggcacata tgacatatat gaaacgctcc gtgtcaatca gccttctatc 480
 attggagacg ctaccttcaa acaatattgg agtgtacgtc aaacaaaacg cacaagcgga 540
 actgtttccg tcagtgaaga ttttaaaaaa tgggaaagct taggcattgcc aatgggaaaa 600
 atgtatgaaa cagcattaac tgtagaaggc taccgaagca acggaagtgc gaatgtcatg 660
 acgaatcagc tgatgattcg ataa 684

<210> 186
 <211> 227
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(27)

<400> 186
 Met Asn Leu Lys Arg Leu Arg Leu Leu Phe Val Met Cys Ile Gly Phe
 1 5 10 15
 Val Leu Thr Leu Thr Ala Val Pro Ala His Ala Glu Thr Ile Tyr Asp
 20 25 30
 Asn Arg Ile Gly Thr His Ser Gly Tyr Asp Phe Glu Leu Trp Lys Asp
 35 40 45
 Tyr Gly Asn Thr Ser Met Thr Leu Asn Asn Gly Gly Ala Phe Ser Ala
 50 55 60
 Ser Trp Asn Asn Ile Gly Asn Ala Leu Phe Arg Lys Gly Lys Lys Phe
 65 70 75 80
 Asp Ser Thr Lys Thr His His Gln Leu Gly Asn Ile Ser Ile Asn Tyr
 85 90 95
 Asn Ala Ala Phe Asn Pro Gly Gly Asn Ser Tyr Leu Cys Val Tyr Gly
 100 105 110
 Trp Thr Gln Ser Pro Leu Ala Glu Tyr Tyr Ile Val Glu Ser Trp Gly
 115 120 125
 Thr Tyr Arg Pro Thr Gly Thr Tyr Lys Gly Ser Phe Tyr Ala Asp Gly
 130 135 140
 Gly Thr Tyr Asp Ile Tyr Glu Thr Leu Arg Val Asn Gln Pro Ser Ile
 145 150 155 160
 Ile Gly Asp Ala Thr Phe Lys Gln Tyr Trp Ser Val Arg Gln Thr Lys
 165 170 175
 Arg Thr Ser Gly Thr Val Ser Val Ser Glu His Phe Lys Lys Trp Glu
 180 185 190
 Ser Leu Gly Met Pro Met Gly Lys Met Tyr Glu Thr Ala Leu Thr Val
 195 200 205
 Glu Gly Tyr Arg Ser Asn Gly Ser Ala Asn Val Met Thr Asn Gln Leu
 210 215 220
 Met Ile Arg
 225

<210> 187
 <211> 642
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 187
 atgtttaagt ttaaaaagaa tttcttagtt ggattatcgg cagctttaat gagtatttagc 60
 ttgttttcgg caaccgcctc tgcagctagc acagactact ggcaaaattg gactgatggg 120
 ggcggtatag taaacgctgt caatgggtct ggcgggaatt acagtgttaa ttggtctaata 180
 accggaaatt ttgtttgttg taaagggttg actacaggtt cgccatttag gacgataaac 240
 tataatgccg gaggttgggc gccgaatggc aatggatatt taactttata tggttggacg 300
 agatcacctc tcatagaata ttatgtagtg gattcatggg gtacttatag acctactgga 360
 acgtataaag gtactgtaaa aagtgatggg ggtacatatg acatatatac aactacacgt 420
 tataacgcac ctccattga tggcgatcgc actactttta cgcagtactg gagtgttcgc 480
 cagtcgaaga gaccaaccgg aagcaacgct acaatcactt tcagcaatca tgtgaacgca 540
 tggaagagcc atggaatgaa tctgggcagt aattgggctt accaagtcac ggcgacagaa 600
 ggatatcaaa gtagtggaag ttctaacgta acagtgtggg aa 642

<210> 188
 <211> 213
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(28)

<400> 188
 Met Phe Lys Phe Lys Lys Asn Phe Leu Val Gly Leu Ser Ala Ala Leu
 1 5 10 15
 Met Ser Ile Ser Leu Phe Ser Ala Thr Ala Ser Ala Ala Ser Thr Asp
 20 25 30
 Tyr Trp Gln Asn Trp Thr Asp Gly Gly Gly Ile Val Asn Ala Val Asn
 35 40 45
 Gly Ser Gly Gly Asn Tyr Ser Val Asn Trp Ser Asn Thr Gly Asn Phe
 50 55 60
 Val Val Gly Lys Gly Trp Thr Thr Gly Ser Pro Phe Arg Thr Ile Asn
 65 70 75 80
 Tyr Asn Ala Gly Val Trp Ala Pro Asn Gly Asn Gly Tyr Leu Thr Leu
 85 90 95
 Tyr Gly Trp Thr Arg Ser Pro Leu Ile Glu Tyr Tyr Val Val Asp Ser
 100 105 110
 Trp Gly Thr Tyr Arg Pro Thr Gly Thr Tyr Lys Gly Thr Val Lys Ser
 115 120 125
 Asp Gly Gly Thr Tyr Asp Ile Tyr Thr Thr Thr Arg Tyr Asn Ala Pro
 130 135 140
 Ser Ile Asp Gly Asp Arg Thr Thr Phe Thr Gln Tyr Trp Ser Val Arg
 145 150 155 160
 Gln Ser Lys Arg Pro Thr Gly Ser Asn Ala Thr Ile Thr Phe Ser Asn
 165 170 175
 His Val Asn Ala Trp Lys Ser His Gly Met Asn Leu Gly Ser Asn Trp
 180 185 190
 Ala Tyr Gln Val Met Ala Thr Glu Gly Tyr Gln Ser Ser Gly Ser Ser
 195 200 205
 Asn Val Thr Val Trp
 210

<210> 189
 <211> 570
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample
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<400> 189
 atggccctta tggcttcgac agactactgg caaaattgga ctgatggtgg tgggacagta 60
 aatgctacca atggatctga tggcaattac agcgtttcat ggtcaaattg cgggaatttt 120
 gttgttggtta aaggctggac taccggatca gcaactaggg taataaacta taatgccgga 180
 gccttttcgc cgtccggtta tggatatttg gctctttatg ggtggacgag aaattcactc 240
 atagaatatt acgtcgttga tagctggggg acttatagac ctactggaac ttataaaggc 300
 actgtgacta gtgatggagg gacttatgac atatacacga ctacacgaac caacgcacct 360
 tccattgacg gcaataatac aactttcacc cagttctgga gtgttaggca gtcgaagaga 420
 ccgattggta ccaacaatac catcaccttt agcaaccatg ttaacgcctg gaagagtaaa 480
 ggaatgaatt tggggagtag ttggtcttat caggtattag caacagaggg ctatcaaagt 540
 agtgggtact ctaacgtaac ggtctggtaa 570

<210> 190
 <211> 189
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 190
 Met Ala Leu Met Ala Ser Thr Asp Tyr Trp Gln Asn Trp Thr Asp Gly
 1 5 10 15
 Gly Gly Thr Val Asn Ala Thr Asn Gly Ser Asp Gly Asn Tyr Ser Val
 20 25 30
 Ser Trp Ser Asn Cys Gly Asn Phe Val Val Gly Lys Gly Trp Thr Thr
 35 40 45
 Gly Ser Ala Thr Arg Val Ile Asn Tyr Asn Ala Gly Ala Phe Ser Pro
 50 55 60
 Ser Gly Asn Gly Tyr Leu Ala Leu Tyr Gly Trp Thr Arg Asn Ser Leu
 65 70 75 80
 Ile Glu Tyr Tyr Val Val Asp Ser Trp Gly Thr Tyr Arg Pro Thr Gly
 85 90 95
 Thr Tyr Lys Gly Thr Val Thr Ser Asp Gly Gly Thr Tyr Asp Ile Tyr
 100 105 110
 Thr Thr Thr Arg Thr Asn Ala Pro Ser Ile Asp Gly Asn Asn Thr Thr
 115 120 125
 Phe Thr Gln Phe Trp Ser Val Arg Gln Ser Lys Arg Pro Ile Gly Thr
 130 135 140
 Asn Asn Thr Ile Thr Phe Ser Asn His Val Asn Ala Trp Lys Ser Lys
 145 150 155 160
 Gly Met Asn Leu Gly Ser Ser Trp Ser Tyr Gln Val Leu Ala Thr Glu
 165 170 175
 Gly Tyr Gln Ser Ser Gly Tyr Ser Asn Val Thr Val Trp
 180 185

<210> 191
 <211> 1053
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 191
 atgaagtcca ttcgcagccg cagcctcgcc accgccgtcc tggctggcgc cctcggcgctc 60
 gcagccgcgc gcgcgcaggc gcagacgctc aacaacaatt ccaccggcac gcacgacggc 120
 ttctactaca cgttctggaa ggactcgggc agcgcctcga tgaccctcca tccgggcgga 180
 cgctacagct cccagtggac cagcaacacc aacaactggg tcggcgggaa aggctggaat 240
 cccggtggcc gcgcgctggg caactactcg ggctactacg gggtaacaa cagccagaac 300
 tcctacctgg cgctgtacgg ctggaccgcg aatccgctgg tcgagtacta cgtgatcgag 360
 agctacggct cctacaaccc ggccagttgc gccggcgggg tggactacgg cagcttccag 420
 agcgatggcg ccacctacaa cgtacgcgcg tgccctgcgc agaacgcgcc gtcgatcgaa 480
 ggcaacaaca gcaccttcta ccagtacttc agcgtgcgca atcccaagaa gggattcggc 540
 aacatctccg gcacgatcac cgtcgccaac cacttcaact actgggccag ccgcggcctc 600
 aacctcggca accacgacta catggtgttc gccaccgagg gctaccagag ccagggcagc 660
 agcgacatca ccgtgagttc gggtaaccgc ggccggcggt gcggcggcaa cacgggcagc 720
 aagaccatcg tgggtgcgcgc gcgcggcacc gccggcggtg agaacatctc gctcaaggtc 780

aacaacgcca	ccatcgccag	ctggacgctc	accaccagca	tggccaacta	cacggccacc	840
acctcggcat	cgggcggctc	gctggtggag	ttcaccaacg	acggcggcaa	ccgcgacgtg	900
caggtggact	accitcagcgt	caatggcgcc	gtccgccagg	ccgaggacca	gacctacaac	960
accggcgtgt	accagaacgg	ccagtgcggc	ggcggcaacg	gccgcagcga	atggctgcac	1020
tgcaacgggtg	ccatcggctt	cggaaatctc	tga			1053

<210> 192
 <211> 350
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(27)

<400> 192
 Met Lys Ser Ile Arg Ser Arg Ser Leu Ala Thr Ala Val Leu Ala Gly
 1 5 10 15
 Ala Leu Gly Val Ala Ala Ala Gly Ala Gln Ala Gln Thr Leu Asn Asn
 20 25 30
 Asn Ser Thr Gly Thr His Asp Gly Phe Tyr Tyr Thr Phe Trp Lys Asp
 35 40 45
 Ser Gly Ser Ala Ser Met Thr Leu His Pro Gly Gly Arg Tyr Ser Ser
 50 55 60
 Gln Trp Thr Ser Asn Thr Asn Asn Trp Val Gly Gly Lys Gly Trp Asn
 65 70 75 80
 Pro Gly Gly Pro Arg Val Val Asn Tyr Ser Gly Tyr Tyr Gly Val Asn
 85 90 95
 Asn Ser Gln Asn Ser Tyr Leu Ala Leu Tyr Gly Trp Thr Arg Asn Pro
 100 105 110
 Leu Val Glu Tyr Tyr Val Ile Glu Ser Tyr Gly Ser Tyr Asn Pro Ala
 115 120 125
 Ser Cys Ala Gly Gly Val Asp Tyr Gly Ser Phe Gln Ser Asp Gly Ala
 130 135 140
 Thr Tyr Asn Val Arg Arg Cys Leu Arg Gln Asn Ala Pro Ser Ile Glu
 145 150 155 160
 Gly Asn Asn Ser Thr Phe Tyr Gln Tyr Phe Ser Val Arg Asn Pro Lys
 165 170 175
 Lys Gly Phe Gly Asn Ile Ser Gly Thr Ile Thr Val Ala Asn His Phe
 180 185 190
 Asn Tyr Trp Ala Ser Arg Gly Leu Asn Leu Gly Asn His Asp Tyr Met
 195 200 205
 Val Phe Ala Thr Glu Gly Tyr Gln Ser Gln Gly Ser Ser Asp Ile Thr
 210 215 220
 Val Ser Ser Gly Thr Gly Gly Gly Gly Gly Gly Asn Thr Gly Ser
 225 230 235 240
 Lys Thr Ile Val Val Arg Ala Arg Gly Thr Ala Gly Gly Glu Asn Ile
 245 250 255
 Ser Leu Lys Val Asn Asn Ala Thr Ile Ala Ser Trp Thr Leu Thr Thr
 260 265 270
 Ser Met Ala Asn Tyr Thr Ala Thr Thr Ser Ala Ser Gly Ser Leu
 275 280 285
 Val Glu Phe Thr Asn Asp Gly Gly Asn Arg Asp Val Gln Val Asp Tyr
 290 295 300
 Leu Ser Val Asn Gly Ala Val Arg Gln Ala Glu Asp Gln Thr Tyr Asn
 305 310 315 320
 Thr Gly Val Tyr Gln Asn Gly Gln Cys Gly Gly Gly Asn Gly Arg Ser
 325 330 335
 Glu Trp Leu His Cys Asn Gly Ala Ile Gly Phe Gly Asn Leu
 340 345 350

<210> 193
 <211> 840
 <212> DNA
 <213> Unknown

<220>

<223> Obtained from an environmental sample

<400> 193

atgacgaagt	atcgggttagg	aataggtatt	ttcattttgt	tggtttgttg	cttttcggcg	60
gcatgtattg	tgcctaaaca	acaagaggaa	caaaaagtgg	ctcctacaga	attgaccggc	120
gcgataacat	tcacagccaa	cagcaacgga	aacaagcccc	tgaacggctc	gccctacggt	180
tacgaaatat	ggacacaggg	cgggaccaat	aacaactga	tctggttcgg	gccggatcag	240
ggcggcgggc	cggctttcag	agccgaatgg	aacaacccta	acgatttttt	aggccgcgtg	300
ggtttttact	ggggtaatgg	cggaataat	accgagtaca	aaaatatgta	tgcggttttt	360
agctacacta	gatctggacg	caacaccgcc	ggtaattatt	catatatagg	gatttatggc	420
tgggctagaa	atccaaatgc	cgcaaaagaa	gaagacaaat	tgatagagta	ttatatgtg	480
gaagattggt	ttggcaatca	atggcaagag	gatagctcac	ccattaccac	taatacaaca	540
agtggaaccg	tattgggaag	ttttactata	gatggcgcg	tttataatgt	cgttagaaat	600
gtcagagtcc	aacaaccttc	gatagacgga	accaaacaat	tcaccaata	cttcagcata	660
cgacaaagc	cccagacag	cgggacaatt	tccattaccg	ggcatttcag	gcaatgggag	720
agcatgggtt	tacagcttgg	caatatgtac	gaggcaaat	ttcttgttga	agccggcggc	780
ggcacaggat	ggctggaatt	ttcatacctt	aaattaacga	tggaagacag	cttaaggtaa	840

<210> 194

<211> 279

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample

<221> SIGNAL

<222> (1)...(21)

<400> 194

Met	Thr	Lys	Tyr	Arg	Leu	Gly	Ile	Gly	Ile	Phe	Ile	Leu	Leu	Val	Cys
1				5					10					15	
Cys	Phe	Ser	Ala	Ala	Cys	Ile	Val	Pro	Lys	Gln	Gln	Glu	Glu	Gln	Lys
			20					25					30		
Val	Ala	Pro	Thr	Glu	Leu	Thr	Gly	Ala	Ile	Thr	Phe	Thr	Ala	Asn	Ser
		35					40				45				
Asn	Gly	Asn	Lys	Pro	Leu	Asn	Gly	Ser	Pro	Tyr	Gly	Tyr	Glu	Ile	Trp
	50					55					60				
Thr	Gln	Gly	Gly	Thr	Asn	Asn	Lys	Leu	Ile	Trp	Phe	Gly	Pro	Asp	Gln
65					70				75					80	
Gly	Gly	Gly	Ala	Ala	Phe	Arg	Ala	Glu	Trp	Asn	Asn	Pro	Asn	Asp	Phe
			85					90					95		
Leu	Gly	Arg	Val	Gly	Phe	Tyr	Trp	Gly	Asn	Gly	Gly	Lys	Tyr	Thr	Glu
			100					105					110		
Tyr	Lys	Asn	Met	Tyr	Ala	Asp	Phe	Ser	Tyr	Thr	Arg	Ser	Gly	Arg	Asn
		115					120					125			
Thr	Ala	Gly	Asn	Tyr	Ser	Tyr	Ile	Gly	Ile	Tyr	Gly	Trp	Ala	Arg	Asn
	130					135					140				
Pro	Asn	Ala	Ala	Lys	Glu	Glu	Asp	Lys	Leu	Ile	Glu	Tyr	Tyr	Ile	Val
145					150					155				160	
Glu	Asp	Trp	Phe	Gly	Asn	Gln	Trp	Gln	Glu	Asp	Ser	Ser	Pro	Ile	Thr
			165					170					175		
Thr	Asn	Thr	Thr	Ser	Gly	Thr	Val	Leu	Gly	Ser	Phe	Thr	Ile	Asp	Gly
			180					185					190		
Ala	Val	Tyr	Asn	Val	Val	Arg	Asn	Val	Arg	Val	Gln	Gln	Pro	Ser	Ile
		195					200					205			
Asp	Gly	Thr	Lys	Thr	Phe	Thr	Gln	Tyr	Phe	Ser	Ile	Arg	Gln	Thr	Pro
	210					215					220				
Arg	Gln	Ser	Gly	Thr	Ile	Ser	Ile	Thr	Gly	His	Phe	Arg	Gln	Trp	Glu
225					230					235				240	
Ser	Met	Gly	Leu	Gln	Leu	Gly	Asn	Met	Tyr	Glu	Ala	Lys	Phe	Leu	Val
			245						250				255		
Glu	Ala	Gly	Gly	Gly	Thr	Gly	Trp	Leu	Glu	Phe	Ser	Tyr	Leu	Lys	Leu
			260					265					270		
Thr	Met	Glu	Asp	Ser	Leu	Arg									
		275													

<210> 195

<211> 1044

<212> DNA
<213> Unknown

<220>
<223> Obtained from an environmental sample

<400> 195
atgttcaatc tgaagagagt ggccggcgctc ctgtgcgtcg cagggctggg ggtgtctgcg 60
gcaaatgcgc agacctgtct caattcgagt gggaccggca ccaacaacgg ctctctattat 120
tccttctgga aagacagtcc gggttcagtg aatttctgca tgtactccgg cggtcgctac 180
acgtcgagct ggagcggcat caacaactgg gtcggcggca agggctggca aaccggatcg 240
cgccggacca tcaactactc cggcagcttc aactcgccgg gcaatggcta cctcgcgctc 300
tacggatgga ccaccaatcc actcgtcgag tactacatcg tcgacaactg gggcacgtat 360
cgtccgcccg gcggccaggg ctacatgggc acggtcacga gcgacggcgc cacgtacgac 420
gtctatcgaa cgcaacgagt cgatgcgccc tcgatcattg gtgatcacca gaccttctat 480
caatactgga gcgtgcgtca gtcgaagagg accggcggaa ccatcaccac cggcaaccac 540
ttcgatggct gggcgagcta cggcatgaac ctgggaactc acaactacca gatcctggcg 600
accgaggggt atcaaagcag cggcagctcg gacctcaccg tgagcgaagg cagcagcagt 660
agcagcagcg gtggcgggag cagttcgagc agcagcggcg gcgggtggcac caagagcttc 720
acgggtccgcg cgcgcgggcac ggccgggtgga gagtcgatca cgttgcgcggt gaataaccag 780
aacgtgcaga cctggacgct cggcacgagc atgacgaact acacggcgtc gacgtcgctg 840
agcggcggca tcaccgtggc gttcacgaac gacgggtggca accgcgatgt tcaggtggac 900
tacatcatcg tgaacggcca gcacgccag tcggaagcgc agagctacaa caccgggctc 960
tacgcgaatg gacgttgccg cggtggctcg aacagcgagt ggatgcactg caacggcgcg 1020
attggctacg gaaacacgcc gtaa 1044

<210> 196
<211> 347
<212> PRT
<213> Unknown

<220>
<223> obtained from an environmental sample

<221> SIGNAL
<222> (1)...(23)

<400> 196
Met Phe Asn Leu Lys Arg Val Ala Ala Leu Leu Cys Val Ala Gly Leu
1 5 10 15
Gly Val Ser Ala Asn Ala Gln Thr Cys Leu Asn Ser Ser Gly Thr
20 25 30
Gly Thr Asn Asn Gly Phe Tyr Tyr Ser Phe Trp Lys Asp Ser Pro Gly
35 40 45
Ser Val Asn Phe Cys Met Tyr Ser Gly Gly Arg Tyr Thr Ser Ser Trp
50 55 60
Ser Gly Ile Asn Asn Trp Val Gly Gly Lys Gly Trp Gln Thr Gly Ser
65 70 75 80
Arg Arg Thr Ile Asn Tyr Ser Gly Ser Phe Asn Ser Pro Gly Asn Gly
85 90 95
Tyr Leu Ala Leu Tyr Gly Trp Thr Thr Asn Pro Leu Val Glu Tyr Tyr
100 105 110
Ile Val Asp Asn Trp Gly Thr Tyr Arg Pro Pro Gly Gly Gln Gly Tyr
115 120 125
Met Gly Thr Val Thr Ser Asp Gly Ala Thr Tyr Asp Val Tyr Arg Thr
130 135 140
Gln Arg Val Asp Ala Pro Ser Ile Ile Gly Asp His Gln Thr Phe Tyr
145 150 155 160
Gln Tyr Trp Ser Val Arg Gln Ser Lys Arg Thr Gly Gly Thr Ile Thr
165 170 175
Thr Gly Asn His Phe Asp Gly Trp Ala Ser Tyr Gly Met Asn Leu Gly
180 185 190
Thr His Asn Tyr Gln Ile Leu Ala Thr Glu Gly Tyr Gln Ser Ser Gly
195 200 205
Ser Ser Asp Leu Thr Val Ser Glu Gly Ser Ser Ser Ser Ser Ser Gly
210 215 220
Gly Gly Ser Ser Ser Ser Ser Gly Gly Gly Gly Thr Lys Ser Phe
225 230 235 240
Thr Val Arg Ala Arg Gly Thr Ala Gly Gly Glu Ser Ile Thr Leu Arg

Val	Asn	Asn	Gln	Asn	Val	Gln	Thr	Trp	Thr	Leu	Gly	Thr	Ser	Met	Thr
			260					265					270		
Asn	Tyr	Thr	Ala	Ser	Thr	Ser	Leu	Ser	Gly	Gly	Ile	Thr	Val	Ala	Phe
		275					280					285			
Thr	Asn	Asp	Gly	Gly	Asn	Arg	Asp	Val	Gln	Val	Asp	Tyr	Ile	Ile	Val
	290					295					300				
Asn	Gly	Gln	Thr	Arg	Gln	Ser	Glu	Ala	Gln	Ser	Tyr	Asn	Thr	Gly	Leu
305					310					315					320
Tyr	Ala	Asn	Gly	Arg	Cys	Gly	Gly	Gly	Ser	Asn	Ser	Glu	Trp	Met	His
				325					330					335	
Cys	Asn	Gly	Ala	Ile	Gly	Tyr	Gly	Asn	Thr	Pro					
			340					345							

<210> 197

<211> 636

<212> DNA

<213> Unknown

<220>

<223> obtained from an environmental sample

<400> 197

atgtttaagt	tcagtaagaa	aatgatgacg	gttatttcttg	cagctaccat	gagtttttgg	60
ttattttgcaa	caacctcaag	tgcagcaacc	gactattggc	aaaattggac	cgatggcgcc	120
ggaacgggtta	atgctgtaaa	cggctccggc	ggtaattaca	gcgtgacatg	gcaaaatacc	180
ggaaatttttg	tcgtcggcaa	aggctggaat	accggatcgc	ctaaccgaac	cattaactac	240
aatgccggcg	tctggggcgc	ttccggcaat	gggtatttga	ctctctacgg	atggacgaga	300
aacgcactca	ttgaatatta	cgctcgtggat	agctggggta	cttatcggcc	tacaggaaca	360
tataaaggga	cggtgacaag	tgatgggggc	acatatgata	tctatacgac	catgcggcac	420
aacgcgcctt	ccattgacgg	aactcaaacg	tttgcccagt	actggagtgt	tcgacaatcg	480
aaaagagcga	ccgggggtcaa	ctcctccatt	acgttcagca	accacgtgaa	cgcatgggct	540
agcaagggaa	tgaatctggg	aagcagctgg	tcatatcagg	tgtagctac	agaggggtat	600
caaagtagcg	gaagctctaa	cgtaacagtg	tggtaa			636

<210> 198

<211> 211

<212> PRT

<213> Unknown

<220>

<223> obtained from an environmental sample

<221> SIGNAL

<222> (1)...(28)

<400> 198

Met	Phe	Lys	Phe	Ser	Lys	Lys	Met	Met	Thr	Val	Ile	Leu	Ala	Ala	Thr
1				5					10					15	
Met	Ser	Phe	Gly	Leu	Phe	Ala	Thr	Thr	Ser	Ser	Ala	Ala	Thr	Asp	Tyr
			20					25					30		
Trp	Gln	Asn	Trp	Thr	Asp	Gly	Gly	Gly	Thr	Val	Asn	Ala	Val	Asn	Gly
		35				40					45				
Ser	Gly	Gly	Asn	Tyr	Ser	Val	Thr	Trp	Gln	Asn	Thr	Gly	Asn	Phe	Val
	50					55				60					
Val	Gly	Lys	Gly	Trp	Asn	Thr	Gly	Ser	Pro	Asn	Arg	Thr	Ile	Asn	Tyr
65					70				75					80	
Asn	Ala	Gly	Val	Trp	Ala	Pro	Ser	Gly	Asn	Gly	Tyr	Leu	Thr	Leu	Tyr
				85					90				95		
Gly	Trp	Thr	Arg	Asn	Ala	Leu	Ile	Glu	Tyr	Tyr	Val	Val	Asp	Ser	Trp
			100					105					110		
Gly	Thr	Tyr	Arg	Pro	Thr	Gly	Thr	Tyr	Lys	Gly	Thr	Val	Thr	Ser	Asp
		115					120					125			
Gly	Gly	Thr	Tyr	Asp	Ile	Tyr	Thr	Thr	Met	Arg	His	Asn	Ala	Pro	Ser
	130					135					140				
Ile	Asp	Gly	Thr	Gln	Thr	Phe	Ala	Gln	Tyr	Trp	Ser	Val	Arg	Gln	Ser
145					150				155					160	
Lys	Arg	Ala	Thr	Gly	Val	Asn	Ser	Ser	Ile	Thr	Phe	Ser	Asn	His	Val
				165					170					175	

Asn Ala Trp Ala Ser Lys Gly Met Asn Leu Gly Ser Ser Trp Ser Tyr
 180 185 190
 Gln Val Leu Ala Thr Glu Gly Tyr Gln Ser Ser Gly Ser Ser Asn Val
 195 200 205
 Thr Val Trp
 210

<210> 199
 <211> 1074
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 199
 atgatttttcg gtctaaagtc gatcacgggc aggcgcgccc tcgcggcgct ggcctgcctt 60
 gccggcctct acatggcgcc ggcgaaatgcg caaacctgca tcacgtcgag ccagacgggc 120
 accaacaacg gcaactactt ttcgttctgg aaagacagcc cgggcacggt gaacttctgc 180
 atgtactccg gcggccgcta cacgtccaac tggagcggca tcaacaactg ggtgggcggc 240
 aagggtggc agacgggctc gtcccgcacc gtctcctact ccggcagctt caattcgccg 300
 ggtaacggct acctgacgct ctacggctgg accaccaatc cgctcatcga gtactacatc 360
 gtcgacaact ggggcagcta tcgtccgccc ggtggccagg gcttcatggg cacggtgaac 420
 accgacggcg gcacgtacga catctatcgc acgcaacggg tcaaccagcc gtcgatcatc 480
 ggacccgcga cgttctacca gtactggagc gtgcggcagt cgaagcgcac cggcggcacc 540
 atcaccacgg ccaaccactt caatgcctgg gccagcctcg gcatgaacct gggacagcac 600
 aactaccagg tgatggccac cgaggggtac cagagcagcg gcagctccga catcacggtg 660
 tgggaaggca cgagcagcg cggaagcagc aatggcggca gcagcaacgg cggcagcagc 720
 aatgggtggca gcggcggcac gaagagcttc acggtgcgcg cgcgcggcac tgcgggcggc 780
 gagtccatca cgctgcgggg caacaaccag aacgtgcaga cctggacgct ggggtaccagc 840
 atgcagaact acacggcctc gacctcgctg agcggcggca tcacggtggc gttcaccaac 900
 gacggcggca gccgcgacgt gcaggtggac tacatcatcg tgaatggcca gaccgcgagc 960
 tccgaacgca agagctacaa cactggcctc tacgccaatg gaagctgtgg tggcggttcg 1020
 aacagcgagt ggatgcattg caacggcgcc atcggctacg gcaatacgcc ctga 1074

<210> 200
 <211> 354
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(30)

<400> 200
 Met Ile Phe Gly Leu Lys Ser Ile Thr Gly Arg Arg Ala Val Ala Ala
 1 5 10 15
 Leu Ala Cys Leu Ala Gly Leu Tyr Met Ala Pro Ala Asn Ala Gln Thr
 20 25 30
 Cys Ile Thr Ser Ser Gln Thr Gly Thr Asn Asn Gly Asn Tyr Phe Ser
 35 40 45
 Phe Trp Lys Asp Ser Pro Gly Thr Val Asn Phe Cys Met Tyr Ser Gly
 50 55 60
 Gly Arg Tyr Thr Ser Asn Trp Ser Gly Ile Asn Asn Trp Val Gly Gly
 65 70 75 80
 Lys Gly Trp Gln Thr Gly Ser Ser Arg Thr Val Ser Tyr Ser Gly Ser
 85 90 95
 Phe Asn Ser Pro Gly Asn Gly Tyr Leu Thr Leu Tyr Gly Trp Thr Thr
 100 105 110
 Asn Pro Leu Ile Glu Tyr Tyr Ile Val Asp Asn Trp Gly Ser Tyr Arg
 115 120 125
 Pro Pro Gly Gly Gln Gly Phe Met Gly Thr Val Asn Thr Asp Gly Gly
 130 135 140
 Thr Tyr Asp Ile Tyr Arg Thr Gln Arg Val Asn Gln Pro Ser Ile Ile
 145 150 155 160
 Gly Thr Ala Thr Phe Tyr Gln Tyr Trp Ser Val Arg Gln Ser Lys Arg
 165 170 175

Thr Gly Gly Thr Ile Thr Thr Ala Asn His Phe Asn Ala Trp Ala Ser
 180 185 190
 Leu Gly Met Asn Leu Gly Gln His Asn Tyr Gln Val Met Ala Thr Glu
 195 200 205
 Gly Tyr Gln Ser Ser Gly Ser Asp Ile Thr Val Trp Glu Gly Thr
 210 215 220
 Ser Ser Gly Gly Ser Ser Asn Gly Gly Ser Ser Ser Ser
 225 230 235 240
 Asn Gly Gly Ser Gly Gly Thr Lys Ser Phe Thr Val Arg Ala Arg Gly
 245 250 255
 Thr Ala Gly Gly Glu Ser Ile Thr Leu Arg Val Asn Asn Gln Asn Val
 260 265 270
 Gln Thr Trp Thr Leu Gly Thr Ser Met Gln Asn Tyr Thr Ala Ser Thr
 275 280 285
 Ser Leu Ser Gly Gly Ile Thr Val Ala Phe Thr Asn Asp Gly Gly Ser
 290 295 300
 Arg Asp Val Gln Val Asp Tyr Ile Ile Val Asn Gly Gln Thr Arg Gln
 305 310 315 320
 Ser Glu Gln Gln Ser Tyr Asn Thr Gly Leu Tyr Ala Asn Gly Ser Cys
 325 330 335
 Gly Gly Gly Ser Asn Ser Glu Trp Met His Cys Asn Gly Ala Ile Gly
 340 345 350
 Tyr Gly

<210> 201
 <211> 1002
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 201
 atgaagatga acagctccct cccctccctc cgcgatgtat tcgcgaatga tttccgcctc 60
 ggggcgccgg tcaatcctgt gacgatcgag atgcaaaaac agttgttgat cgatcatgtc 120
 aacagtatta cggcagagaa ccatatgaag tttgagcatc ttcagccgga agaagggaaa 180
 ttaccctttc aggaagcgga tcggattgtg gatittgctt gttcgcaccg aatggcggtt 240
 cgagggcaca cacttgatag gcacaaccag actccggatt ggggtgtttca agatgggtcaa 300
 ggccatttcg tcagtcggga tgtgttgctt gagcggatga aatgtcacat ttcaactgtt 360
 gtacggcgat acaagggaaa aatatattgt tgggatgtca tcaacgaagc ggtagccgac 420
 gaaggagacg aattgttgag gccgtcgaag tggcgacaaa tcatcgggga cgattttatg 480
 gaacaagcat ttctctacgc ttatgaagct gaccagatg cactgctttt ttacaatgac 540
 tataatgaat gttttccgga aaagagagaa aaaatttttg cacttggtcaa atcgctgcgt 600
 gataaaggca ttccgattca tggcatcggc atgcaggcgc actggagcct gaccgcccgc 660
 tcgcttgatg aaattcgtgc ggcgattgaa cggtatgcgt cccttggtgt tgttcttcat 720
 attacggaaac tcgatgtatc catgtttgaa tttcacgac gtcgaaccga tttggctgtc 780
 ccgacgaacg aaatgatcga acagcaagca gaacggtatg ggcaaatttt tgctttgttt 840
 aaggagtatc gcgatgttat tcaaagtgtc acattttggg gaattgctga tgaccataca 900
 tggctcgata actttccagt gcacgggaga aaaaactggc cgcttttgtt cgatgaacag 960
 cataaaccga aaccagcttt ttggcgggca gtgagtgtct ga 1002

<210> 202
 <211> 333
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 202
 Met Lys Met Asn Ser Ser Leu Pro Ser Leu Arg Asp Val Phe Ala Asn
 1 5 10 15
 Asp Phe Arg Ile Gly Ala Ala Val Asn Pro Val Thr Ile Glu Met Gln
 20 25 30
 Lys Gln Leu Leu Ile Asp His Val Asn Ser Ile Thr Ala Glu Asn His
 35 40 45
 Met Lys Phe Glu His Leu Gln Pro Glu Glu Gly Lys Phe Thr Phe Gln
 50 55 60

Glu Ala Asp Arg Ile Val Asp Phe Ala Cys Ser His Arg Met Ala Val
 65 70 75 80
 Arg Gly His Thr Leu Val Trp His Asn Gln Thr Pro Asp Trp Val Phe
 85 90 95
 Gln Asp Gly Gln Gly His Phe Val Ser Arg Asp Val Leu Leu Glu Arg
 100 105 110
 Met Lys Cys His Ile Ser Thr Val Val Arg Arg Tyr Lys Gly Lys Ile
 115 120 125
 Tyr Cys Trp Asp Val Ile Asn Glu Ala Val Ala Asp Glu Gly Asp Glu
 130 135 140
 Leu Leu Arg Pro Ser Lys Trp Arg Gln Ile Ile Gly Asp Asp Phe Met
 145 150 155 160
 Glu Gln Ala Phe Leu Tyr Ala Tyr Glu Ala Asp Pro Asp Ala Leu Leu
 165 170 175
 Phe Tyr Asn Asp Tyr Asn Glu Cys Phe Pro Glu Lys Arg Glu Lys Ile
 180 185 190
 Phe Ala Leu Val Lys Ser Leu Arg Asp Lys Gly Ile Pro Ile His Gly
 195 200 205
 Ile Gly Met Gln Ala His Trp Ser Leu Thr Arg Pro Ser Leu Asp Glu
 210 215 220
 Ile Arg Ala Ala Ile Glu Arg Tyr Ala Ser Leu Gly Val Val Leu His
 225 230 235 240
 Ile Thr Glu Leu Asp Val Ser Met Phe Glu Phe His Asp Arg Arg Thr
 245 250 255
 Asp Leu Ala Val Pro Thr Asn Glu Met Ile Glu Gln Gln Ala Glu Arg
 260 265 270
 Tyr Gly Gln Ile Phe Ala Leu Phe Lys Glu Tyr Arg Asp Val Ile Gln
 275 280 285
 Ser Val Thr Phe Trp Gly Ile Ala Asp Asp His Thr Trp Leu Asp Asn
 290 295 300
 Phe Pro Val His Gly Arg Lys Asn Trp Pro Leu Leu Phe Asp Glu Gln
 305 310 315 320
 His Lys Pro Lys Pro Ala Phe Trp Arg Ala Val Ser Val
 325 330

<210> 203
 <211> 687
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 203
 atgaaatctg cacgcgcact tttggtggcg ctatcacgca tacttccgat cgcacttggtg 60
 ctgttgctcg cccccgtccc cgcgcaagcc caacaggtct gcaacaacgg aacgggcacg 120
 cataacggct tcttctggac gttttggaag gacggcggca cggcctgcat gacgctcggc 180
 tcgggcggca attatagcac gacgttcaat ctgtccggcg gccgcaacct tgttgcgggc 240
 aagggctggc agactggctc caccaaccga gtcgtcgggtt acaatgcggg cgtctggaac 300
 ccaggcacca attcttatct gacgctctat ggctgggtcga cgaatccgct cgtcgaatat 360
 tatgtcgtgg accattgggg cagccaattc accccgccag gcaacggcgc gcagagcatg 420
 gggaccgtga ccaccgacgg cggcacctac aacatctacc gcacccaacg cgtcaacgcg 480
 ccttcgatca tcggcaacgc cacgttctac caatattgga gcgtgcgcac ttcgcgccgc 540
 gggcaaggca cgaacaacac gatcaccttc gccaatcacg tcaacgcttg gcgcagccgc 600
 ggcataaacc ttgggacat gaattatcaa gtcattggcca cgggaaggtt cggctcgaac 660
 ggaagctcca acctcacagt atggttag 687

<210> 204
 <211> 228
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(30)

<400> 204

Met Lys Ser Ala Arg Ala Leu Leu Val Ala Leu Ser Arg Ile Leu Pro
 1 5 10 15
 Ile Ala Leu Val Leu Leu Leu Ala Pro Val Pro Ala Gln Ala Gln Gln
 20 25 30
 Val Cys Asn Asn Gly Thr Gly Thr His Asn Gly Phe Phe Trp Thr Phe
 35 40 45
 Trp Lys Asp Gly Gly Thr Ala Cys Met Thr Leu Gly Ser Gly Gly Asn
 50 55 60
 Tyr Ser Thr Thr Phe Asn Leu Ser Gly Gly Arg Asn Leu Val Ala Gly
 65 70 75 80
 Lys Gly Trp Gln Thr Gly Ser Thr Asn Arg Val Val Gly Tyr Asn Ala
 85 90 95
 Gly Val Trp Asn Pro Gly Thr Asn Ser Tyr Leu Thr Leu Tyr Gly Trp
 100 105 110
 Ser Thr Asn Pro Leu Val Glu Tyr Tyr Val Val Asp His Trp Gly Ser
 115 120 125
 Gln Phe Thr Pro Pro Gly Asn Gly Ala Gln Ser Met Gly Thr Val Thr
 130 135 140
 Thr Asp Gly Gly Thr Tyr Asn Ile Tyr Arg Thr Gln Arg Val Asn Ala
 145 150 155 160
 Pro Ser Ile Ile Gly Asn Ala Thr Phe Tyr Gln Tyr Trp Ser Val Arg
 165 170 175
 Thr Ser Arg Arg Gly Gln Gly Thr Asn Asn Thr Ile Thr Phe Ala Asn
 180 185 190
 His Val Asn Ala Trp Arg Ser Arg Gly Met Asn Leu Gly Thr Met Asn
 195 200 205
 Tyr Gln Val Met Ala Thr Glu Gly Phe Gly Ser Asn Gly Ser Ser Asn
 210 215 220
 Leu Thr Val Trp
 225

<210> 205
 <211> 1068
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 205
 atgcaaat tcaaatcacc actgtcatgg gccggatcac tattactgat cctgtccacc 60
 gccctgtttt caacagcggc cactgcccag gaatactgct ccaaccagac cggtacacac 120
 agcgggtttt actttaccga ttggtctgac ggcggcggta ctgcctgcat tactctggga 180
 gacgacggaa attacagtta cacctgggtcc aacacaggca attttgtcgg tggcaagggc 240
 tggagtaccg gcacctccaa tcgggtgatc gggttacaacg ccggagacta ctcgccctcc 300
 ggcaactcct acctggcgct gtatggctgg agcaccaatc cactgattga gtactacgtg 360
 gtggatagct ggggtagctg gcgtccgccc ggtggcacct cggtaggtag agtcaccagc 420
 gatggcgagg cttacgacct gtaccgcacc gagcgcgtgc agcagccctc catcgaaggc 480
 acggccacct tctatcaata ttggagcgtg cgcacctcac agcgtcccca ggggcagaac 540
 aacaccatca cttttcagaa ccacgtggat gcctggggcca atcagggtcg gaacctcggc 600
 acccacaact atcaggtaat ggcgaccgaa ggctacgaaa gcagcggcag ctccaacgtc 660
 acggtttggg attccggcac cagtagcggg aacgggtggc acgctggcgg cggtggtggc 720
 gaggcaggta acggctccaa ctactgggtc gtgcgtgagg tgggcacttc gggcaacgaa 780
 cagttgcgag tcaacgtcag cggcaacacg gttgaaaccc tgaacctgtc taccaactgg 840
 caggactaca ccatcaacac caacgcttcc ggcgatgtga atgtggagtt gatcaacgat 900
 cagggcgagg gctacgaagc ccgggtggaa tacgtcatcg tcaacggcga taccgctac 960
 ggcgctgac agagctacaa caccagcgcc tgggacggcg agtgcggcgg cggttccttt 1020
 accatgtgga tgcactgcga aggcattcctc ggttttggcg atatgtaa 1068

<210> 206
 <211> 355
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(29)

<400> 206

Met Gln Ile Phe Lys Ser Pro Leu Ser Trp Ala Gly Ser Leu Leu Leu
 1 5 10 15
 Ile Leu Ser Thr Ala Leu Phe Ser Thr Ala Ala Thr Ala Gln Glu Tyr
 20 25 30
 Cys Ser Asn Gln Thr Gly Thr His Ser Gly Phe Tyr Phe Thr His Trp
 35 40 45
 Ser Asp Gly Gly Gly Thr Ala Cys Ile Thr Leu Gly Asp Asp Gly Asn
 50 55 60
 Tyr Ser Tyr Thr Trp Ser Asn Thr Gly Asn Phe Val Gly Gly Lys Gly
 65 70 75 80
 Trp Ser Thr Gly Thr Ser Asn Arg Val Ile Gly Tyr Asn Ala Gly Asp
 85 90 95
 Tyr Ser Pro Ser Gly Asn Ser Tyr Leu Ala Leu Tyr Gly Trp Ser Thr
 100 105 110
 Asn Pro Leu Ile Glu Tyr Tyr Val Val Asp Ser Trp Gly Ser Trp Arg
 115 120 125
 Pro Pro Gly Gly Thr Ser Val Gly Thr Val Thr Ser Asp Gly Gly Thr
 130 135 140
 Tyr Asp Leu Tyr Arg Thr Glu Arg Val Gln Gln Pro Ser Ile Glu Gly
 145 150 155 160
 Thr Ala Thr Phe Tyr Gln Tyr Trp Ser Val Arg Thr Ser Gln Arg Pro
 165 170 175
 Gln Gly Gln Asn Asn Thr Ile Thr Phe Gln Asn His Val Asp Ala Trp
 180 185 190
 Ala Asn Gln Gly Trp Asn Leu Gly Thr His Asn Tyr Gln Val Met Ala
 195 200 205
 Thr Glu Gly Tyr Glu Ser Ser Gly Ser Ser Asn Val Thr Val Trp Asp
 210 215 220
 Ser Gly Thr Ser Ser Gly Asn Gly Gly Asn Ala Gly Gly Gly Gly Gly
 225 230 235 240
 Glu Ala Gly Asn Gly Ser Asn Ser Leu Val Val Arg Ala Val Gly Thr
 245 250 255
 Ser Gly Asn Glu Gln Leu Arg Val Asn Val Ser Gly Asn Thr Val Glu
 260 265 270
 Thr Leu Asn Leu Ser Thr Asn Trp Gln Asp Tyr Thr Ile Asn Thr Asn
 275 280 285
 Ala Ser Gly Asp Val Asn Val Glu Leu Ile Asn Asp Gln Gly Glu Gly
 290 295 300
 Tyr Glu Ala Arg Val Glu Tyr Val Ile Val Asn Gly Asp Thr Arg Tyr
 305 310 315 320
 Gly Ala Asp Gln Ser Tyr Asn Thr Ser Ala Trp Asp Gly Glu Cys Gly
 325 330 335
 Gly Gly Ser Phe Thr Met Trp Met His Cys Glu Gly Ile Leu Gly Phe
 340 345 350
 Gly Asp Met
 355

<210> 207

<211> 633

<212> DNA

<213> Unknown

<220>

<223> obtained from an environmental sample

<400> 207

atgaaattaa	aaaagaagat	gctcacttta	ctcctgacgg	cttcgatgag	tttcggttta	60
tttggggcaa	cctcgagtgc	agcaacggat	tattggcaat	attggacgga	tggcggcgga	120
acggtgaatg	cggttaacgg	gtccgggggc	aattacagcg	taacttggca	aaatagcggg	180
aacttcgtgg	tcggcaaaag	ctggagcgta	gggtcgccaa	atcggacgat	caattacaat	240
gccggcatct	gggaaccttc	ggggaacggg	tacttgaccc	tttacggatg	gactagaaac	300
tcgctgatcg	agtattacgt	tgtcgacagt	tgggggacgt	accggccaac	aggtactcac	360
aaaggaaacg	tgaacagcga	cggaggcacc	tacgatattt	atacgaccat	gcgctataat	420
gcgcccttcca	ttgatggcac	gcagacgttc	caacagttct	ggagcgtgcg	gcaatcgaaa	480
cgaccaaccg	gcagcaacgt	ctccatcacc	ttcagcaatc	acgtgaatgc	ctggagaagc	540
aagggcatga	acctgggcag	cagctggctc	taccaggtct	tggcgacgga	aggctatcag	600
agcagcggaa	gatccaacgt	cacgggtgtg	taa			633

<210> 208
 <211> 210
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(27)

<400> 208
 Met Lys Leu Lys Lys Lys Met Leu Thr Leu Leu Leu Thr Ala Ser Met
 1 5 10 15
 Ser Phe Gly Leu Phe Gly Ala Thr Ser Ser Ala Ala Thr Asp Tyr Trp
 20 25 30
 Gln Tyr Trp Thr Asp Gly Gly Gly Thr Val Asn Ala Val Asn Gly Ser
 35 40 45
 Gly Gly Asn Tyr Ser Val Thr Trp Gln Asn Ser Gly Asn Phe Val Val
 50 55 60
 Gly Lys Gly Trp Ser Val Gly Ser Pro Asn Arg Thr Ile Asn Tyr Asn
 65 70 75 80
 Ala Gly Ile Trp Glu Pro Ser Gly Asn Gly Tyr Leu Thr Leu Tyr Gly
 85 90 95
 Trp Thr Arg Asn Ser Leu Ile Glu Tyr Val Val Asp Ser Trp Gly
 100 105 110
 Thr Tyr Arg Pro Thr Gly Thr His Lys Gly Thr Val Asn Ser Asp Gly
 115 120 125
 Gly Thr Tyr Asp Ile Tyr Thr Thr Met Arg Tyr Asn Ala Pro Ser Ile
 130 135 140
 Asp Gly Thr Gln Thr Phe Gln Gln Phe Trp Ser Val Arg Gln Ser Lys
 145 150 155 160
 Arg Pro Thr Gly Ser Asn Val Ser Ile Thr Phe Ser Asn His Val Asn
 165 170 175
 Ala Trp Arg Ser Lys Gly Met Asn Leu Gly Ser Ser Trp Ser Tyr Gln
 180 185 190
 Val Leu Ala Thr Glu Gly Tyr Gln Ser Ser Gly Arg Ser Asn Val Thr
 195 200 205
 Val Trp
 210

<210> 209
 <211> 1194
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 209
 atgaaaacat ttagtgtagc caagtctagc gttgttttcg caatggcttt gggatatggct 60
 tcgacagctt ttgctcagga tttctgcagc aatgcgcaac attccggcca aaaggtaacg 120
 attacttcga accaaactgg taaaatcggc gatatcggtt acgaactctg ggacgaaaac 180
 gggtcatgggt gtagtgctac cttctatagc gatggttcca tggactgcaa tatcactggg 240
 gctaaggact atctctgccg tgcgggcctt tccctcggca gtaacaagac ctacaaggaa 300
 cttgggtgggtg atatgattgc cgagttcaag cttgtgaaga gcggtgcccc gaatgtgggt 360
 tactcttata tcggtatcta tggctggatg gaagggtgtt ctggaacgcc tagccagttg 420
 gtcgaataact acgtgattga taacaccctc gccaatgaca tgccgggtag ctggattggg 480
 aacgaaagaa aggggtaccat tacggttgac ggcgggtacct atactgttta tcgcaatacc 540
 cgtacaggtc cggctattaa gaacagcggg aacgtcacgt tctatcagta ttacagcgtt 600
 cgtacctctc cgcgcgattg cgggtaccatc aatatttccg aacacatgag acagtgggaa 660
 aagatgggca tgacctaggg taagctctac gaagccaagg tgcttggcga agcgggtaac 720
 gtgaatggcg aagtcgcggt tggtcacatg gacttccgc atgctaagggt ttatgtgaaa 780
 aacggctctg atccggcttc ttctcttctt gtgaagtcca gctcttctac agtaacgcca 840
 aaatccagct cctcgaaggg taacggcaac gtttctggta aaattgacgc ctgcaaggac 900
 gctatgggcc atgaaggcaa agaaacgaga actcagggtc agaacaactc tagcgtgacg 960
 ggtaacgtcg gcagctctcc gtaccactat gaaatttggg atcaggggtg taacaactcc 1020
 atgacgttct acgacaacgg tactttataag gcaagctgga atggtaccaa cgacttcctt 1080

gctcgtgtcg gtttcaagta tgatgaaaag cacacttacg aagaacttgg ccctatcgat 1140
gcctactaca agtggagcaa gcagggtagt gctggtggct acaactacat cggt 1194

<210> 210
<211> 398
<212> PRT
<213> Unknown

<220>
<223> obtained from an environmental sample

<221> SIGNAL
<222> (1)...(25)

<400> 210
Met Lys Thr Phe Ser Val Thr Lys Ser Ser Val Val Phe Ala Met Ala
1 5 10 15
Leu Gly Met Ala Ser Thr Ala Phe Ala Gln Asp Phe Cys Ser Asn Ala
20 25 30
Gln His Ser Gly Gln Lys Val Thr Ile Thr Ser Asn Gln Thr Gly Lys
35 40 45
Ile Gly Asp Ile Gly Tyr Glu Leu Trp Asp Glu Asn Gly His Gly Gly
50 55 60
Ser Ala Thr Phe Tyr Ser Asp Gly Ser Met Asp Cys Asn Ile Thr Gly
65 70 75 80
Ala Lys Asp Tyr Leu Cys Arg Ala Gly Leu Ser Leu Gly Ser Asn Lys
85 90 95
Thr Tyr Lys Glu Leu Gly Gly Asp Met Ile Ala Glu Phe Lys Leu Val
100 105 110
Lys Ser Gly Ala Gln Asn Val Gly Tyr Ser Tyr Ile Gly Ile Tyr Gly
115 120 125
Trp Met Glu Gly Val Ser Gly Thr Pro Ser Gln Leu Val Glu Tyr Tyr
130 135 140
Val Ile Asp Asn Thr Leu Ala Asn Asp Met Pro Gly Ser Trp Ile Gly
145 150 155 160
Asn Glu Arg Lys Gly Thr Ile Thr Val Asp Gly Gly Thr Tyr Thr Val
165 170 175
Tyr Arg Asn Thr Arg Thr Gly Pro Ala Ile Lys Asn Ser Gly Asn Val
180 185 190
Thr Phe Tyr Gln Tyr Phe Ser Val Arg Thr Ser Pro Arg Asp Cys Gly
195 200 205
Thr Ile Asn Ile Ser Glu His Met Arg Gln Trp Glu Lys Met Gly Met
210 215 220
Thr Met Gly Lys Leu Tyr Glu Ala Lys Val Leu Gly Glu Ala Gly Asn
225 230 235 240
Val Asn Gly Glu Val Arg Gly Gly His Met Asp Phe Pro His Ala Lys
245 250 255
Val Tyr Val Lys Asn Gly Ser Asp Pro Ala Ser Ser Ser Ser Val Lys
260 265 270
Ser Ser Ser Ser Thr Val Thr Pro Lys Ser Ser Ser Ser Lys Gly Asn
275 280 285
Gly Asn Val Ser Gly Lys Ile Asp Ala Cys Lys Asp Ala Met Gly His
290 295 300
Glu Gly Lys Glu Thr Arg Thr Gln Gly Gln Asn Asn Ser Ser Val Thr
305 310 315 320
Gly Asn Val Gly Ser Ser Pro Tyr His Tyr Glu Ile Trp Tyr Gln Gly
325 330 335
Gly Asn Asn Ser Met Thr Phe Tyr Asp Asn Gly Thr Tyr Lys Ala Ser
340 345 350
Trp Asn Gly Thr Asn Asp Phe Leu Ala Arg Val Gly Phe Lys Tyr Asp
355 360 365
Glu Lys His Thr Tyr Glu Glu Leu Gly Pro Ile Asp Ala Tyr Tyr Lys
370 375 380
Trp Ser Lys Gln Gly Ser Ala Gly Gly Tyr Asn Tyr Ile Gly
385 390 395

<210> 211
<211> 1086
<212> DNA

<213> Unknown

<220>

<223> obtained from an environmental sample

<400> 211

atgataagtt	ctaaagcatc	acagtcattg	ggctgggtcac	tattgggtggc	cctgtccgcc	60
gttctgcttt	cggcgacagc	ttccgcccag	caacactgct	ccaaccacac	cggtacgcac	120
aacgggtttt	actttaccca	ttggtcagac	gggtggcggt	ccgcctgcat	gactctgggg	180
gacgacggca	actacagcta	tacctgggtc	aacactggca	attttgtcgg	tggttaagggc	240
tggaacacag	gtacatccaa	ccgggtgatt	ggttacaacg	ccggagacta	ctcgccctcc	300
ggcaactcct	acctggcact	gtatgggtcg	agcaccaatc	cgctgattga	atattacgtg	360
gtcgacagtt	ggggcagctg	gcgtccgccc	gggtggcacct	ctgtgggcac	ggtaaccagc	420
gacgggtggca	cttacgacct	gtaccgaacc	cagcgtgtgc	agcagccctc	cattgagggt	480
acggccacct	tctatcaata	ctggagcgtg	cgcacctcac	agcggcctca	ggggcaaac	540
aacaccatca	cctttcagaa	ccacgtgaat	gcctgggcca	atcagggctg	gaatctgggc	600
accacaact	atcaggtgat	ggcgaccgaa	ggctacgaaa	gcagcggcag	ctccaacgtc	660
accgtttggg	attccggcac	cagtagcggg	ggcgggtggc	gtggcaacgc	gggcggcggc	720
ggagccccg	gtggtggtga	ggctggaggc	ggctcccaat	cactggttgt	gcgtgcgggt	780
ggcacttcgg	gcaatgaaca	gttgccgctc	aacgtcagtg	gcaacacggg	ggaaaccctg	840
aacctgtcta	ccaactggca	ggactacacc	atcaacacca	acgcctccgg	cgatgtcaat	900
gtggaattga	tcaacgacca	gggcgaaggc	tacgaggccc	gcgtcgagta	cgatcatcatc	960
aacggcgata	cccgtacgg	cgccgaccag	agctacaaca	ccagcgcctg	ggacggcgag	1020
tgcggttagcg	gttcctttac	catgtggatg	cactgcgaag	gcatacctcg	ttttggcgat	1080
atgtaa						1086

<210> 212

<211> 361

<212> PRT

<213> Unknown

<220>

<223> obtained from an environmental sample

<221> SIGNAL

<222> (1)...(29)

<400> 212

Met	Ile	Ser	Ser	Lys	Ala	Ser	Gln	Ser	Trp	Gly	Trp	Ser	Leu	Leu	Val
1				5					10					15	
Ala	Leu	Ser	Ala	Val	Leu	Leu	Ser	Ala	Thr	Ala	Ser	Ala	Gln	Gln	His
			20					25					30		
Cys	Ser	Asn	Gln	Thr	Gly	Thr	His	Asn	Gly	Phe	Tyr	Phe	Thr	His	Trp
		35					40					45			
Ser	Asp	Gly	Gly	Gly	Thr	Ala	Cys	Met	Thr	Leu	Gly	Asp	Asp	Gly	Asn
	50					55					60				
Tyr	Ser	Tyr	Thr	Trp	Ser	Asn	Thr	Gly	Asn	Phe	Val	Gly	Gly	Lys	Gly
65					70				75					80	
Trp	Ser	Thr	Gly	Thr	Ser	Asn	Arg	Val	Ile	Gly	Tyr	Asn	Ala	Gly	Asp
			85						90					95	
Tyr	Ser	Pro	Ser	Gly	Asn	Ser	Tyr	Leu	Ala	Leu	Tyr	Gly	Trp	Ser	Thr
			100					105					110		
Asn	Pro	Leu	Ile	Glu	Tyr	Tyr	Val	Val	Asp	Ser	Trp	Gly	Ser	Trp	Arg
		115					120					125			
Pro	Pro	Gly	Gly	Thr	Ser	Val	Gly	Thr	Val	Thr	Ser	Asp	Gly	Gly	Thr
		130				135					140				
Tyr	Asp	Leu	Tyr	Arg	Thr	Gln	Arg	Val	Gln	Gln	Pro	Ser	Ile	Glu	Gly
145					150				155					160	
Thr	Ala	Thr	Phe	Tyr	Gln	Tyr	Trp	Ser	Val	Arg	Thr	Ser	Gln	Arg	Pro
			165						170					175	
Gln	Gly	Gln	Asn	Asn	Thr	Ile	Thr	Phe	Gln	Asn	His	Val	Asn	Ala	Trp
			180					185					190		
Ala	Asn	Gln	Gly	Trp	Asn	Leu	Gly	Thr	His	Asn	Tyr	Gln	Val	Met	Ala
		195					200					205			
Thr	Glu	Gly	Tyr	Glu	Ser	Ser	Gly	Ser	Ser	Asn	Val	Thr	Val	Trp	Asp
		210				215					220				
Ser	Gly	Thr	Ser	Ser	Gly	Gly	Gly	Gly	Gly	Gly	Asn	Ala	Gly	Gly	Gly
225					230				235					240	
Gly	Ala	Pro	Gly	Gly	Gly	Glu	Ala	Gly	Gly	Gly	Ser	Asn	Ser	Leu	Val

Val Arg Ala Val Gly Thr Ser Gly Asn Glu Gln Leu Arg Val Asn Val
 245 250 255
 Ser Gly Asn Thr Val Glu Thr Leu Asn Leu Ser Thr Asn Trp Gln Asp
 260 265 270
 Tyr Thr Ile Asn Thr Asn Ala Ser Gly Asp Val Asn Val Glu Leu Ile
 275 280 285
 Asn Asp Gln Gly Glu Gly Tyr Glu Ala Arg Val Glu Tyr Val Ile Ile
 290 295 300
 Asn Gly Asp Thr Arg Tyr Gly Ala Asp Gln Ser Tyr Asn Thr Ser Ala
 305 310 315
 Trp Asp Gly Glu Cys Gly Ser Gly Ser Phe Thr Met Trp Met His Cys
 320 325 330 335
 Glu Gly Ile Leu Gly Phe Gly Asp Met
 340 345 350 355 360

<210> 213
 <211> 912
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 213
 gtgaacgcac aacaaaccct tacgtctaac tccaccggta ctcattggtgg tcactactat 60
 tctttctgga aggactccgg caatgcgtcc ttactctct acgatggcgg acgttacggc 120
 tcgcaatgga atagcggcac caacaattgg gtgggcggta aaggctggaa cccgggcggc 180
 gcaaaagtcg ttaactacga aggttattac ggcgttaaca attcccagaa ttcttacctg 240
 gcactctacg ggtggaccgg caatccgctg atcgagtact acataatcga aagttacggt 300
 tcgtacaacc catcgagctg tagtggcggt actaactacg gtagcttcca aagcgatggt 360
 gcgacctata acgtccgccc ttgccagcgc gtacagcagc catcgattga tggaacgcaa 420
 acgttctatc agtatttcag cgttcgctca cccaaaaagg gcttcggcca aatcagcggc 480
 actatcaatg taggcaacca ctttaattat tgggccagca aagggttgaa tttgggtagc 540
 cacgattaca tggttctggc gactgaaggc tatcagagca gcggcaattc agatatttcc 600
 gtgtccgaag gcagcagcgg cggctcttcc tcaggcggtt cgacctccag cggaagctcc 660
 tccggtagta cgaccagttc ttcaggaggc ggtggcgggc gcatcacagt acgtgctcgc 720
 ggcaactaatg gtgatgagcg tatcagcctg cgtgtcggcg gttctgcggg agccagttgg 780
 acactcagta ccagcgcaca aagctatagc tacacaggcg gcgcctctgg cgatatccag 840
 gtggaattcg atatcaagct tatcgatacc gtcgacctcg agggggggcc cggtacccaa 900
 ttcgccctat ag 912

<210> 214
 <211> 303
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 214
 Val Asn Ala Gln Gln Thr Leu Thr Ser Asn Ser Thr Gly Thr His Gly
 1 5 10 15
 Gly His Tyr Tyr Ser Phe Trp Lys Asp Ser Gly Asn Ala Ser Phe Thr
 20 25 30
 Leu Tyr Asp Gly Gly Arg Tyr Gly Ser Gln Trp Asn Ser Gly Thr Asn
 35 40 45
 Asn Trp Val Gly Gly Lys Gly Trp Asn Pro Gly Gly Ala Lys Val Val
 50 55 60
 Asn Tyr Glu Gly Tyr Tyr Gly Val Asn Asn Ser Gln Asn Ser Tyr Leu
 65 70 75 80
 Ala Leu Tyr Gly Trp Thr Arg Asn Pro Leu Ile Glu Tyr Tyr Ile Ile
 85 90 95
 Glu Ser Tyr Gly Ser Tyr Asn Pro Ser Cys Ser Gly Gly Thr Asn
 100 105 110
 Tyr Gly Ser Phe Gln Ser Asp Gly Ala Thr Tyr Asn Val Arg Arg Cys
 115 120 125
 Gln Arg Val Gln Gln Pro Ser Ile Asp Gly Thr Gln Thr Phe Tyr Gln
 130 135 140

Tyr Phe Ser Val Arg Ser Pro Lys Lys Gly Phe Gly Gln Ile Ser Gly
 145 150 155 160
 Thr Ile Asn Val Gly Asn His Phe Asn Tyr Trp Ala Ser Lys Gly Leu
 165 170 175
 Asn Leu Gly Ser His Asp Tyr Met Val Leu Ala Thr Glu Gly Tyr Gln
 180 185 190
 Ser Ser Gly Asn Ser Asp Ile Ser Val Ser Glu Gly Ser Ser Gly Gly
 195 200 205
 Ser Ser Ser Gly Gly Ser Thr Ser Ser Gly Ser Ser Gly Ser Thr
 210 215 220
 Thr Ser Ser Ser Gly Gly Gly Gly Gly Ile Thr Val Arg Ala Arg
 225 230 235 240
 Gly Thr Asn Gly Asp Glu Arg Ile Ser Leu Arg Val Gly Gly Ser Ala
 245 250 255
 Val Ala Ser Trp Thr Leu Ser Thr Ser Ala Gln Ser Tyr Ser Tyr Thr
 260 265 270
 Gly Gly Ala Ser Gly Asp Ile Gln Val Glu Phe Asp Ile Lys Leu Ile
 275 280 285
 Asp Thr Val Asp Leu Glu Gly Gly Pro Gly Thr Gln Phe Ala Leu
 290 295 300

<210> 215
 <211> 1065
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 215
 atgtttgcaa gattcgagaa actggccgcg gcgggtaaag ccgtcgtggc cctggcaggg 60
 ctgcgccctt tgggcacggc gcctgccaat gcacagacct gtctcacgaa caattccacc 120
 ggcaccaaca acggctacta ctactcgttc tgggaaggaca gcgggcaacgt gaccttctgc 180
 atgtacgggg gcggccgcta tacctcgcag tggagcaaca tcaacaactg ggtgggcggc 240
 aagggctgga atccgggagg tcgtcggacc gtcacctatt cggggacgtt caaccggaac 300
 ggcaattcct atctcacgct gtacggctgg accaccaatc cactgggtcga gtactacatc 360
 gtcgacagct ggggcagctg gcgtccgccc ggttccggct acatgggttc cgtcacgagc 420
 gacggcggca cctacgacat ctatcgcacg cagcgcgtca accagccctc gatcatcggc 480
 accgcgacgt tctaccagta ctggagcgtg cggcagcaga agcgcgtggg tggcaccatc 540
 accaccggca accacttcga tgcctgggct tcgctgggca tgaacctcgg ccagcacaac 600
 tacatgggtca tggccaccga gggctaccag agcagcggca gctccgacat cacgggtgggc 660
 ggcaccagca gtcctcgtc gtcgagcggg ggcagcagca gcagtagcag cagcagcggg 720
 ggtggcggct cgaagagctt caccgtgcgc gcgcgggggt cgacgggcgg tgagcagatc 780
 agtttgcgcg tgaacaacca gaccgtgcag aactggacgc tgggcaccag catgcagaac 840
 tacaccgct ccaccaacct gagcggcggc atcaccgtgc acttcaccaa tgacagcggc 900
 aaccgcgacg tgcagggtga ctacatccag gtgaacggcc agacgcgtca atccgagcag 960
 cagagctaca acaccgggct gtatgccaac ggcagctgtg gcggcggcgg ctacagcgag 1020
 tggatgcatt gcaatggcgc gatcggttac ggcaacacgc cgtag 1065

<210> 216
 <211> 354
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(31)

<400> 216
 Met Phe Ala Arg Phe Glu Lys Leu Ala Ala Ala Gly Lys Ala Val Val
 1 5 10 15
 Ala Leu Ala Gly Leu Ala Leu Leu Gly Thr Ala Pro Ala Asn Ala Gln
 20 25 30
 Thr Cys Leu Thr Asn Asn Ser Thr Gly Thr Asn Asn Gly Tyr Tyr Tyr
 35 40 45
 Ser Phe Trp Lys Asp Ser Gly Asn Val Thr Phe Cys Met Tyr Gly Gly
 50 55 60

Gly Arg Tyr Thr Ser Gln Trp Ser Asn Ile Asn Asn Trp Val Gly Gly
 65 70 75 80
 Lys Gly Trp Asn Pro Gly Gly Arg Arg Thr Val Thr Tyr Ser Gly Thr
 85 90 95
 Phe Asn Pro Asn Gly Asn Ser Tyr Leu Thr Leu Tyr Gly Trp Thr Thr
 100 105 110
 Asn Pro Leu Val Glu Tyr Tyr Ile Val Asp Ser Trp Gly Ser Trp Arg
 115 120 125
 Pro Pro Gly Ser Gly Tyr Met Gly Ser Val Thr Ser Asp Gly Gly Thr
 130 135 140
 Tyr Asp Ile Tyr Arg Thr Gln Arg Val Asn Gln Pro Ser Ile Ile Gly
 145 150 155 160
 Thr Ala Thr Phe Tyr Gln Tyr Trp Ser Val Arg Gln Gln Lys Arg Val
 165 170 175
 Gly Gly Thr Ile Thr Thr Gly Asn His Phe Asp Ala Trp Ala Ser Leu
 180 185 190
 Gly Met Asn Leu Gly Gln His Asn Tyr Met Val Met Ala Thr Glu Gly
 195 200 205
 Tyr Gln Ser Ser Gly Ser Ser Asp Ile Thr Val Gly Gly Thr Ser Ser
 210 215 220
 Ser Ser Ser Ser Ser Gly Gly Ser Ser Ser Ser Ser Ser Ser Ser Gly
 225 230 235 240
 Gly Gly Gly Ser Lys Phe Thr Val Arg Ala Arg Gly Ser Thr Gly
 245 250 255
 Gly Glu Gln Ile Ser Leu Arg Val Asn Asn Gln Thr Val Gln Asn Trp
 260 265 270
 Thr Leu Gly Thr Ser Met Gln Asn Tyr Thr Ala Ser Thr Asn Leu Ser
 275 280 285
 Gly Gly Ile Thr Val His Phe Thr Asn Asp Ser Gly Asn Arg Asp Val
 290 295 300
 Gln Val Asp Tyr Ile Gln Val Asn Gly Gln Thr Arg Gln Ser Glu Gln
 305 310 315 320
 Gln Ser Tyr Asn Thr Gly Leu Tyr Ala Asn Gly Ser Cys Gly Gly Gly
 325 330 335
 Gly Tyr Ser Glu Trp Met His Cys Asn Gly Ala Ile Gly Tyr Gly Asn
 340 345 350
 Thr Pro

<210> 217
 <211> 1083
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 217
 atgacttttcg tcaagacgat caccggcaga cgcgccatcg cggcgttcct ctgcctcgcc 60
 ggcctctaca tggcgccggc aaacgcgcaa acctgcatca cgtccagcca gaccggcacc 120
 aacaacggga actacttttc gttctggaaa gacagcccgg gcacggtgaa cttctgcatg 180
 taccCGaatg gccgctacac ctCGaactgg agcggcatca acaactgggt cggcggcaag 240
 ggctggtcga ccggctccag ccgcaccgtc agctattcgg gcagcttcaa ttcgcccggc 300
 aacggctacc tgactctcta cgggtggacc accaaccggc tcatcgagta ctacatcgtc 360
 gagaactggg gtaactaccg cccgcccggc ggccaggggt acatggggac cgtcaattcc 420
 gacggggcga cctatgacat ctaccggacc ttccgggaca accagccctg catcacgggc 480
 aactcctgCG acttctacca gtactggagc gtgcgccagt ccaagcgag cagcggcacc 540
 atcaccacgg ccaatcactt cgcggcgtgg aacagcctcg gcatgaacct gggccagcac 600
 aactaccagg tcatggccac cgagggttac cagagcagcg gcagctccga catcacggtc 660
 acggaaggcg gcggcggcag cagcaatggg ggccagcaga acggcggcag cagcaatggc 720
 ggcagcagca atggcggcgg cggcggcacc aagagcttca cggctccgcg ccgtggcacc 780
 gcgggtggcg agtccatcac gctgcgtgtc aacaaccaga acgtgcagac ctggacgctg 840
 ggcaccggca tgcagaacta cacggcctcg acctcgctga gcgggtggcat cacgggtgcac 900
 ttaccaacag acggcggaag ccgCGacgtg caggtggact acatccaggt gaacggcagc 960
 acgcgccagt ccgaggcaca gagctacaac accggcgccct acctgaacgg ccgttgcggc 1020
 ggtggcgga acagcgaatg gatgcattgc aacggcgcca tcggctacgg caatacgccc 1080
 tga 1083

<210> 218

<211> 360
 <212> PRT
 <213> unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(29)

<400> 218
 Met Thr Phe Val Lys Thr Ile Thr Gly Arg Arg Ala Ile Ala Ala Phe
 1 5 10 15
 Leu Cys Leu Ala Gly Leu Tyr Met Ala Pro Ala Asn Ala Gln Thr Cys
 20 25 30
 Ile Thr Ser Ser Gln Thr Gly Thr Asn Asn Gly Asn Tyr Phe Ser Phe
 35 40 45
 Trp Lys Asp Ser Pro Gly Thr Val Asn Phe Cys Met Tyr Pro Asn Gly
 50 55 60
 Arg Tyr Thr Ser Asn Trp Ser Gly Ile Asn Asn Trp Val Gly Gly Lys
 65 70 75 80
 Gly Trp Ser Thr Gly Ser Ser Arg Thr Val Ser Tyr Ser Gly Ser Phe
 85 90 95
 Asn Ser Pro Gly Asn Gly Tyr Leu Thr Leu Tyr Gly Trp Thr Thr Asn
 100 105 110
 Pro Leu Ile Glu Tyr Tyr Ile Val Glu Asn Trp Gly Asn Tyr Arg Pro
 115 120 125
 Pro Gly Gly Gln Gly Tyr Met Gly Thr Val Asn Ser Asp Gly Ala Thr
 130 135 140
 Tyr Asp Ile Tyr Arg Thr Phe Arg Asp Asn Gln Pro Cys Ile Thr Gly
 145 150 155 160
 Asn Ser Cys Asp Phe Tyr Gln Tyr Trp Ser Val Arg Gln Ser Lys Arg
 165 170 175
 Ser Ser Gly Thr Ile Thr Thr Ala Asn His Phe Ala Ala Trp Asn Ser
 180 185 190
 Leu Gly Met Asn Leu Gly Gln His Asn Tyr Gln Val Met Ala Thr Glu
 195 200 205
 Gly Tyr Gln Ser Ser Gly Ser Ser Asp Ile Thr Val Thr Glu Gly Gly
 210 215 220
 Gly Gly Ser Ser Asn Gly Gly Ser Ser Asn Gly Gly Ser Ser Asn Gly
 225 230 235 240
 Gly Ser Ser Asn Gly Gly Gly Gly Thr Lys Ser Phe Thr Val Arg
 245 250 255
 Ala Arg Gly Thr Ala Gly Gly Glu Ser Ile Thr Leu Arg Val Asn Asn
 260 265 270
 Gln Asn Val Gln Thr Trp Thr Leu Gly Thr Gly Met Gln Asn Tyr Thr
 275 280 285
 Ala Ser Thr Ser Leu Ser Gly Gly Ile Thr Val His Phe Thr Asn Asp
 290 295 300
 Gly Gly Ser Arg Asp Val Gln Val Asp Tyr Ile Gln Val Asn Gly Ser
 305 310 315 320
 Thr Arg Gln Ser Glu Ala Gln Ser Tyr Asn Thr Gly Ala Tyr Leu Asn
 325 330 335
 Gly Arg Cys Gly Gly Gly Asn Ser Glu Trp Met His Cys Asn Gly
 340 345 350
 Ala Ile Gly Tyr Gly Asn Thr Pro
 355 360

<210> 219
 <211> 1029
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 219
 atgacatcag gtctcaagaa agtgatggca ttctgtctgtc tcgccaccct tggcgtttcg
 gcgcgatgccc agacatgtat tcagtccagt cagaccggca ccaacaacgg attctatttc

60
 120

tcctttctgga	aggacaaccc	gggcacgggtg	cagttctgcc	tcgagagcgg	cggtcgttac	180
acctccaact	ggaacggcat	caacaactgg	gtgggcggca	aggggtggca	gaccggcgca	240
cgccgcacgg	tgaactactc	gggctcgttc	aactcgccgg	gcaacggcta	tctggcgctg	300
tacggctgga	ccaccaatcc	gctggctcag	tactacatcg	tcgacagctg	gggcagcttc	360
cgctccggcg	gcaacactgc	aggcctgtgg	gtactgggtga	acagcgatgg	cggcacctac	420
gacatctatc	gcgcgcatcg	cagtaacgcg	ccctgcatca	ccggcagcag	ctgcgacttc	480
gaccagtact	ggagcgtgcg	acagtcgaag	cgcgtcggcg	gcaccatcac	caccggcaac	540
cacttcgatg	cctgggcgaa	ccaccagatg	aatctggggc	agttcaacta	ccagatcatg	600
gctaccgagg	gtttccagag	caacggcagc	tccgacatca	ccgtcagtga	atgcaccagc	660
aattgcggcg	gtggcgggcg	cggcgggggt	ggcagcaaca	gcatacacgt	gcgcgcgcgc	720
ggcacgggcg	gcggcgagca	gatccggctg	cggggtgaaca	acaccacggg	gcaaacctgg	780
acgctgacca	ccagctacca	gaacttcacg	gcttcgacct	cgctgagcgg	cggcaccatc	840
gtcgagtact	tcaacgacag	ttccggccat	gacgtgcagg	tcgactacat	catcgtgaat	900
ggcgtgaccc	gccagtccga	atcgagagc	tacaacaccg	ggctgtatgc	caacgggcgt	960
tgccggcgcg	gctccaacag	cgagtggatg	cattgcaacg	gtgccattgg	atacggaat	1020
accccgtaa						1029

<210> 220

<211> 342

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample

<221> SIGNAL

<222> (1)...(23)

<400> 220

Met	Thr	Ser	Gly	Leu	Lys	Lys	Val	Met	Ala	Phe	Val	Cys	Leu	Ala	Thr
1				5				10					15		
Leu	Gly	Val	Ser	Ala	His	Ala	Gln	Thr	Cys	Ile	Gln	Ser	Ser	Gln	Thr
			20					25					30		
Gly	Thr	Asn	Asn	Gly	Phe	Tyr	Phe	Ser	Phe	Trp	Lys	Asp	Asn	Pro	Gly
		35					40					45			
Thr	Val	Gln	Phe	Cys	Leu	Gln	Ser	Gly	Gly	Arg	Tyr	Thr	Ser	Asn	Trp
	50					55					60				
Asn	Gly	Ile	Asn	Asn	Trp	Val	Gly	Gly	Lys	Gly	Trp	Gln	Thr	Gly	Ala
65					70				75					80	
Arg	Arg	Thr	Val	Asn	Tyr	Ser	Gly	Ser	Phe	Asn	Ser	Pro	Gly	Asn	Gly
				85					90					95	
Tyr	Leu	Ala	Leu	Tyr	Gly	Trp	Thr	Thr	Asn	Pro	Leu	Val	Glu	Tyr	Tyr
			100					105					110		
Ile	Val	Asp	Ser	Trp	Gly	Ser	Phe	Arg	Pro	Pro	Gly	Asn	Thr	Ala	Gly
		115					120					125			
Leu	Trp	Val	Leu	Val	Asn	Ser	Asp	Gly	Gly	Thr	Tyr	Asp	Ile	Tyr	Arg
	130					135					140				
Ala	His	Arg	Ser	Asn	Ala	Pro	Cys	Ile	Thr	Gly	Ser	Ser	Cys	Asp	Phe
145					150					155				160	
Asp	Gln	Tyr	Trp	Ser	Val	Arg	Gln	Ser	Lys	Arg	Val	Gly	Gly	Thr	Ile
				165					170					175	
Thr	Thr	Gly	Asn	His	Phe	Asp	Ala	Trp	Ala	Asn	His	Gln	Met	Asn	Leu
			180					185					190		
Gly	Gln	Phe	Asn	Tyr	Gln	Ile	Met	Ala	Thr	Glu	Gly	Phe	Gln	Ser	Asn
		195					200					205			
Gly	Ser	Ser	Asp	Ile	Thr	Val	Ser	Glu	Cys	Thr	Ser	Asn	Cys	Gly	Gly
	210					215					220				
Gly	Gly	Gly	Gly	Gly	Gly	Gly	Ser	Asn	Ser	Ile	Thr	Val	Arg	Ala	Arg
225					230					235				240	
Gly	Thr	Gly	Gly	Gly	Glu	Gln	Ile	Arg	Leu	Arg	Val	Asn	Asn	Thr	Thr
				245					250					255	
Val	Gln	Thr	Trp	Thr	Leu	Thr	Thr	Ser	Tyr	Gln	Asn	Phe	Thr	Ala	Ser
			260					265					270		
Thr	Ser	Leu	Ser	Gly	Gly	Thr	Ile	Val	Glu	Tyr	Phe	Asn	Asp	Ser	Ser
		275					280					285			
Gly	His	Asp	Val	Gln	Val	Asp	Tyr	Ile	Ile	Val	Asn	Gly	Val	Thr	Arg
	290					295					300				
Gln	Ser	Glu	Ser	Gln	Ser	Tyr	Asn	Thr	Gly	Leu	Tyr	Ala	Asn	Gly	Arg
305					310					315					320

Cys Gly Gly Gly Ser Asn Ser Glu Trp Met His Cys Asn Gly Ala Ile
 325 330 335
 Gly Tyr Gly Asn Thr Pro
 340

<210> 221
 <211> 1044
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 221
 atgattgtta gtttcaagag cgtgaaggca ctcgctgccc tggccgtgct cggcgtgacc 60
 gccgcgcagg cgcaaaccctg catcaattcc agccagaccg gcaccaacaa cggcaattat 120
 ttttcattct ggaaagacaa cccgggcacg gtgaccttct gcatgtatgc caacggccgc 180
 tacacctcca actggagcgg catcaacaac tgggtgggtg gcaagggctg gcagaccggc 240
 tcgaatcgca cggtgacctt ctccggttcg ttcaactcgc ccggcaacgg ctacctcacc 300
 ctgtacgggt ggaccacgaa tccgctgacg gagtactaca tcgtcgacag ttggggcagt 360
 tatcgaccgc ccggcggcca gggcttcatg ggcaccgtga cgaccgacgg cggcacctac 420
 gacatctatc gcacgcagcg cgtgaaccag ccttccatca tcgggcaccgc gacgttctac 480
 cagtactgga gcgtgcggca gtcgaagcgc gtggggggga ccatcaccac cgccaaccac 540
 ttcaatgcct gggcgacgct gggcatgaac ctggggccagc acaactacca ggtcatggcc 600
 accgaggggt accagagcag cggcagctcc gacatcaccg tgaccgaagg cggcggcagc 660
 tcgtcgctcg cgagcggcgg cggcagcacc agcagcggcg gtggcggcag caagagcttc 720
 acggtgcgcg cccgcggcac ggtcggcggc gaaaacatcc agctgcaggt caacaaccag 780
 acggtggcga gctggaacct gaccaccagc atgcagaact acaacgcctc gaccagcctg 840
 agtggcggca tcaccgtggt ctacaccaac gacggcggta accgcgacgt ccaggtcgac 900
 tacatcaccg tgaacggcca gacccgccag tccgaagcgc agagtittcaa caccgggctg 960
 tatgccaacg gacgttgtgg cggcggctcg aacagcgagt ggatgcattg caatggcgcg 1020
 atcggctacg gcaacacgcc gtaa 1044

<210> 222
 <211> 347
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(24)

<400> 222
 Met Ile Val Ser Phe Lys Ser Val Lys Ala Leu Ala Cys Leu Ala Val
 1 5 10 15
 Leu Gly Val Thr Ala Ala Gln Ala Gln Thr Cys Ile Asn Ser Ser Gln
 20 25 30
 Thr Gly Thr Asn Asn Gly Asn Tyr Phe Ser Phe Trp Lys Asp Asn Pro
 35 40 45
 Gly Thr Val Thr Phe Cys Met Tyr Ala Asn Gly Arg Tyr Thr Ser Asn
 50 55 60
 Trp Ser Gly Ile Asn Asn Trp Val Gly Gly Lys Gly Trp Gln Thr Gly
 65 70 75 80
 Ser Asn Arg Thr Val Thr Tyr Ser Gly Ser Phe Asn Ser Pro Gly Asn
 85 90 95
 Gly Tyr Leu Thr Leu Tyr Gly Trp Thr Asn Pro Leu Ile Glu Tyr
 100 105 110
 Tyr Ile Val Asp Ser Trp Gly Ser Tyr Arg Pro Pro Gly Gly Gln Gly
 115 120 125
 Phe Met Gly Thr Val Thr Thr Asp Gly Gly Thr Tyr Asp Ile Tyr Arg
 130 135 140
 Thr Gln Arg Val Asn Gln Pro Ser Ile Ile Gly Thr Ala Thr Phe Tyr
 145 150 155 160
 Gln Tyr Trp Ser Val Arg Gln Ser Lys Arg Val Gly Gly Thr Ile Thr
 165 170 175
 Thr Ala Asn His Phe Asn Ala Trp Ala Thr Leu Gly Met Asn Leu Gly
 180 185 190

Gln His Asn Tyr Gln Val Met Ala Thr Glu Gly Tyr Gln Ser Ser Gly
 195 200 205
 Ser Ser Asp Ile Thr Val Thr Glu Gly Gly Gly Ser Ser Ser Ser Ser
 210 215 220
 Ser Gly Gly Gly Ser Thr Ser Ser Gly Gly Gly Gly Ser Lys Ser Phe
 225 230 235 240
 Thr Val Arg Ala Arg Gly Thr Val Gly Gly Glu Asn Ile Gln Leu Gln
 245 250 255
 Val Asn Asn Gln Thr Val Ala Ser Trp Asn Leu Thr Thr Ser Met Gln
 260 265 270
 Asn Tyr Asn Ala Ser Thr Ser Leu Ser Gly Gly Ile Thr Val Val Tyr
 275 280 285
 Thr Asn Asp Gly Gly Asn Arg Asp Val Gln Val Asp Tyr Ile Thr Val
 290 295 300
 Asn Gly Gln Thr Arg Gln Ser Glu Ala Gln Ser Phe Asn Thr Gly Leu
 305 310 315 320
 Tyr Ala Asn Gly Arg Cys Gly Gly Gly Ser Asn Ser Glu Trp Met His
 325 330 335
 Cys Asn Gly Ala Ile Gly Tyr Gly Asn Thr Pro
 340 345

<210> 223
 <211> 642
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 223
 atgtttaagt ttaaaaagaa tttcttagtt ggattatcgg cagctttaat gagtattagc 60
 ttgttttcgg caaccgcctc tgcagctagc acagactact ggcaaaattg gactgatggg 120
 ggcggtatag taaacgctgt caatgggtct ggcgggaatt acagtgttaa ttggtctaatt 180
 accggaaatt tcgtttgttg taaagggttg actacaggtt cgccatttag gacgataaac 240
 tataatgccg gagtttgggc accgaatgga aatggatatt taactttata tggttggacg 300
 agatcacctc tcatagaata ttatgtagtg gattcatggg gtacttatag acctactgga 360
 acgtataaag gtactgtaaa aagtgatggg ggtacatatg acatatatac aactacacgt 420
 tataacgcac ctccattga tggcgatcgc actactttta cgcagtactg gagtgttcgc 480
 caaacgaaga gaccaaccgg aagcaacgct acaatcactt tcagcaatca tgtaaacgca 540
 tggaagagcc atggaatgaa tctgggcagt aattgggctt accaagtcac ggcgacagaa 600
 ggatatcaaa gtagtggaag ttctaacgta acagtgtggt aa 642

<210> 224
 <211> 213
 <212> PRT
 <213> unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(28)

<400> 224
 Met Phe Lys Phe Lys Asn Phe Leu Val Gly Leu Ser Ala Ala Leu
 1 5 10 15
 Met Ser Ile Ser Leu Phe Ser Ala Thr Ala Ser Ala Ala Ser Thr Asp
 20 25 30
 Tyr Trp Gln Asn Trp Thr Asp Gly Gly Ile Val Asn Ala Val Asn
 35 40 45
 Gly Ser Gly Gly Asn Tyr Ser Val Asn Trp Ser Asn Thr Gly Asn Phe
 50 55 60
 Val Val Gly Lys Gly Trp Thr Thr Gly Ser Pro Phe Arg Thr Ile Asn
 65 70 75 80
 Tyr Asn Ala Gly Val Trp Ala Pro Asn Gly Asn Gly Tyr Leu Thr Leu
 85 90 95
 Tyr Gly Trp Thr Arg Ser Pro Leu Ile Glu Tyr Tyr Val Val Asp Ser
 100 105 110
 Trp Gly Thr Tyr Arg Pro Thr Gly Thr Tyr Lys Gly Thr Val Lys Ser

115 120 125
 Asp Gly Thr Tyr Asp Ile Tyr Thr Thr Thr Arg Tyr Asn Ala Pro
 130 135 140
 Ser Ile Asp Gly Asp Arg Thr Thr Phe Thr Gln Tyr Trp Ser Val Arg
 145 150 155
 Gln Thr Lys Arg Pro Thr Gly Ser Asn Ala Thr Ile Thr Phe Ser Asn
 165 170 175
 His Val Asn Ala Trp Lys Ser His Gly Met Asn Leu Gly Ser Asn Trp
 180 185 190
 Ala Tyr Gln Val Met Ala Thr Glu Gly Tyr Gln Ser Ser Gly Ser Ser
 195 200 205
 Asn Val Thr Val Trp
 210

<210> 225
 <211> 1059
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 225
 atgtttgta gtctcaggaa gacggccttg gcggtgcctgt tgctcgccgg cctcggaatc 60
 tcgacttcac aagcccagac ctgcatcacg tccagcggga cgggcaccaa caacggccac 120
 tactattcct tctggaagga cagtggcggc accgtcaact tctgcatgta cgcgaacggc 180
 cgctacacct ccaactggag cggcatcaac aactgggttg gcggaagggt ctggcagacc 240
 ggctcagccc ggacgatcag ctactcgggc tcgttcaact caccggcaa tggttatctc 300
 accctgtacg gttggaccac caatccattg atcgagtact acatcgtcga caactggggc 360
 acgtaccggc cgccgggagg ctccggctac atgggcacgg tgacgagcga cggcggcacc 420
 tacgacgtct atcgcaccca gcgcgtaaac cagccttcca tcatcggcac cgcgacgttc 480
 tatcaatact ggagcgtgcg ccagcagaag cggaccggcg ggaccatcac caccggcaat 540
 cacttcgacg cctgggccgc atacggaatg aacctcggca ccacaacta ccagatcatg 600
 gcgaccgagg gttaccagag cagcggcagt tcggacatca cggtgagcga gggcgggtggc 660
 agttcatcga gcagcagctc gtcgagcagc agcagttcgt cctcttcgag cggcggcggc 720
 ggcacgaaga gcttcacggg ccgcgcgcgc ggcacggcgg gcggtgaatc catcacgctg 780
 cggtgaaca accagaacgt gcagacctgg acgctgggca cgtcgatgca gaactacacc 840
 gcatcgacca gcctctccgg tggcatcacc gtcgcgtaca ccaacgacag cggcaatcgc 900
 gacgtgcagg tggactacat cgtcgtgaac ggcgccaccc gccagtcgga ggcgcagagc 960
 tacaacaccg gtctctatgc caacggtcgt tgcggcggcg gctccaacag cgagtggatg 1020
 cactgcaacg ggcagatcgg ctacgggaat actccctag 1059

<210> 226
 <211> 352
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(25)

<400> 226
 Met Phe Val Ser Leu Arg Lys Thr Ala Trp Ala Cys Leu Leu Leu Ala
 1 5 10 15
 Gly Leu Gly Ile Ser Thr Ser Gln Ala Gln Thr Cys Ile Thr Ser Ser
 20 25 30
 Gly Thr Gly Thr Asn Asn Gly His Tyr Tyr Ser Phe Trp Lys Asp Ser
 35 40 45
 Gly Gly Thr Val Asn Phe Cys Met Tyr Ala Asn Gly Arg Tyr Thr Ser
 50 55 60
 Asn Trp Ser Gly Ile Asn Asn Trp Val Gly Gly Lys Gly Trp Gln Thr
 65 70 75 80
 Gly Ser Arg Arg Thr Ile Ser Tyr Ser Gly Ser Phe Asn Ser Pro Gly
 85 90 95
 Asn Gly Tyr Leu Thr Leu Tyr Gly Trp Thr Thr Asn Pro Leu Ile Glu
 100 105 110
 Tyr Tyr Ile Val Asp Asn Trp Gly Thr Tyr Arg Pro Pro Gly Gly Ser

<400> 228
Met Gly Gly Thr Thr Gly Ser Gly Gly Ser Ala Ala Ala Gly Ala Gly
1 5 10 15
Thr ser Gly Ser Ala Gly Gly Thr Ala Gly Ala Leu Gly Pro Gly Gly
20 25 30

Thr Gln Gly Ser Gly Gly Ala Ala Gly Gly Thr Ser Gly Thr Gly Gly
 35 40 45
 Ala Ile Ser Ser Ser Cys Thr Glu Ala Asp Lys Thr Val Cys Asn Asn
 50 55 60
 Glu Thr Gly Arg His Cys Asn Tyr Thr Tyr Glu Tyr Trp Lys Asp Gln
 65 70 75 80
 Gly Ser Gly Cys Leu Val Asn Lys Ala Asp Gly Phe Ser Val Asn Trp
 85 90 95
 Asn Asn Ile Asn Asn Leu Leu Gly Arg Lys Gly Leu Arg Pro Gly Ser
 100 105 110
 Ser Asn Gln Thr Val Thr Tyr Gln Ala Asn Tyr Gln Pro Asn Gly Asn
 115 120 125
 Ser Tyr Leu Cys Val Tyr Gly Trp Thr Gln Asn Pro Leu Val Glu Tyr
 130 135 140
 Tyr Ile Val Asp Ser Trp Gly Ser Trp Arg Pro Gly Gly Thr Ser
 145 150 155 160
 Met Gly Thr Val Asn Ala Asp Gly Gly Thr Tyr Asp Ile Tyr Arg Thr
 165 170 175
 Gln Arg Val Asn Gln Pro Ser Ile Glu Gly Thr Lys Thr Phe Tyr Gln
 180 185 190
 Tyr Trp Ser Val Arg Thr Gln Lys Arg Thr Ser Gly Thr Ile Thr Val
 195 200 205
 Ala Ala His Phe Asp Ala Trp Ala Thr Lys Gly Met Asn Met Gly Ser
 210 215 220
 Leu Tyr Glu Val Ser Met Thr Val Glu Gly Tyr Gln Ser Ser Gly Thr
 225 230 235 240
 Ala Asp Val Ser Phe Ser Met Lys
 245

<210> 229
 <211> 642
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 229
 atgtttaagt ttacaaagaa attccttagtt ggggttaacgg cagctttgat gagtattagc 60
 ttgttttcgg caaacgcctc tgcagctaac acagactact ggcaaaattg gactgatggg 120
 ggcggaacag taaacgctgt caatgggtct ggcgggaatt acagtgtgaa ttggtctaatt 180
 accgggaatt tcgttgttgg taaagggttg actacagggt cgccatttag gacgataaac 240
 tataatgccg gagtttgggc gccgaatggc aatgcatatt tgactttata tgggtggacg 300
 cgatcacccc tcatagaata ttatgtagtg gattcatggg gtacttatag acctactgga 360
 acgtataaag gtacgggttta cagtgatggg ggtacatatg acgtgtacac aactacacgt 420
 tatgatgcac ctccattga tggcgataaa actactttta cgcagtactg gagtgttcgc 480
 cagtcgaaga gaccaactgg aagcaacgct acaatcactt tcagcaatca cgtaaacgca 540
 tggaagagat atgggatgaa tctgggtagt aattgggtctt accaagtctt agcgacagag 600
 ggatatcaaa gtagtggaag ttctaacgta acagtgtggt aa 642

<210> 230
 <211> 213
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(28)

<400> 230
 Met Phe Lys Phe Thr Lys Lys Phe Leu Val Gly Leu Thr Ala Ala Leu
 1 5 10 15
 Met Ser Ile Ser Leu Phe Ser Ala Asn Ala Ser Ala Ala Asn Thr Asp
 20 25 30
 Tyr Trp Gln Asn Trp Thr Asp Gly Gly Thr Val Asn Ala Val Asn
 35 40 45
 Gly Ser Gly Gly Asn Tyr Ser Val Asn Trp Ser Asn Thr Gly Asn Phe

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      50      55      60
Val Val Gly Lys Gly Trp Thr Thr Gly Ser Pro Phe Arg Thr Ile Asn
65      70      75      80
Tyr Asn Ala Gly Val Trp Ala Pro Asn Gly Asn Ala Tyr Leu Thr Leu
      85      90      95
Tyr Gly Trp Thr Arg Ser Pro Leu Ile Glu Tyr Tyr Val Val Asp Ser
      100      105      110
Trp Gly Thr Tyr Arg Pro Thr Gly Thr Tyr Lys Gly Thr Val Tyr Ser
      115      120      125
Asp Gly Gly Thr Tyr Asp Val Tyr Thr Thr Thr Arg Tyr Asp Ala Pro
      130      135      140
Ser Ile Asp Gly Asp Lys Thr Thr Phe Thr Gln Tyr Trp Ser Val Arg
      145      150      155      160
Gln Ser Lys Arg Pro Thr Gly Ser Asn Ala Thr Ile Thr Phe Ser Asn
      165      170      175
His Val Asn Ala Trp Lys Arg Tyr Gly Met Asn Leu Gly Ser Asn Trp
      180      185      190
Ser Tyr Gln Val Leu Ala Thr Glu Gly Tyr Gln Ser Ser Gly Ser Ser
      195      200      205
Asn Val Thr Val Trp
      210

```

<210> 231
 <211> 1008
 <212> DNA
 <213> Bacteria

```

<400> 231
atgaacctgc tcgtccagcc gaggcgtcgc agacgcggtc cggtcacctt gctcgtcagg      60
agcgcgtggg ccgtcgcgct ggcggcgctc gccgcgtga tgctgccggg caccgcccag      120
gccgacacgg tcgtcacgac caaccaggag ggcaccaaca acggctacta ctactcgttc      180
tggaccgaca gccagggcac cgtctccatg aacatgggct ccggcgggtca gtacagcacc      240
tcgtggcgca acaccggcaa cttcgtcgcg ggcaagggct gggccaacgg cggccgcccg      300
accgtgcagt actcgggcag cttcaacccc tccggcaacg cgtacctggc gctctacgga      360
tggacgtcga acccgctcgt cgagtactac atcgtcgaca actggggcac ctaccggccc      420
acgggcgagt acaagggcac cgtcaccagc gacggcggca cctacgacat ctacaagacg      480
acccgctgca acaagccctc cgtcgagggc acccgcacct tcgaccagta ctggagcgtc      540
cggcaggcga agcggaccgg cggcaccatc accgaccgga accacttcga cgcgtggggc      600
cgggccggga tgccgctcgg caacttcagc tactacatga tcatggccac cgagggctac      660
cagagcagcg gcagctccag catcaacgtc ggcgggaccg gccgcggcga caacggcggc      720
ggcgacaacg ggggcggtgg cggcggtgtc accgccacgg tgtccgcccg gcagaagtgg      780
ggcgaccggg acaacctcga cgtctccgtc agcggcgcca gcgactggac ggtgacgatg      840
aacgtgccgt ccccggcgaa ggtcctgtcg acctggaacg tcaacgccag ctatcccagt      900
gcgagacgcg tgaccgccag gtcgaacggc agcggcaaca actggggcgc caccatccag      960
gccaacggca actggacctg gccagcgtg tcctgcagcg cgggctga      1008

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<210> 232
 <211> 335
 <212> PRT
 <213> Bacteria

<220>
 <221> SIGNAL
 <222> (1)...(41)

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<400> 232
Met Asn Leu Leu Val Gln Pro Arg Arg Arg Arg Arg Gly Pro Val Thr
1      5      10      15
Leu Leu Val Arg Ser Ala Trp Ala Val Ala Leu Ala Ala Leu Ala Ala
20      25      30
Leu Met Leu Pro Gly Thr Ala Gln Ala Asp Thr Val Val Thr Thr Asn
35      40      45
Gln Glu Gly Thr Asn Asn Gly Tyr Tyr Tyr Ser Phe Trp Thr Asp Ser
50      55      60
Gln Gly Thr Val Ser Met Asn Met Gly Ser Gly Gly Gln Tyr Ser Thr
65      70      75      80
Ser Trp Arg Asn Thr Gly Asn Phe Val Ala Gly Lys Gly Trp Ala Asn
85      90      95
Gly Gly Arg Arg Thr Val Gln Tyr Ser Gly Ser Phe Asn Pro Ser Gly

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Asn	Ala	Tyr	100	Leu	Ala	Leu	Tyr	Gly	105	Trp	Thr	Ser	Asn	Pro	110	Leu	Val	Glu
Tyr	Tyr	115	Ile	Val	Asp	Asn	Trp	Gly	120	Thr	Tyr	Arg	Pro	125	Thr	Gly	Glu	Tyr
Lys	Gly	130	Thr	Val	Thr	Ser	135	Asp	Gly	Gly	Thr	Tyr	140	Asp	Ile	Tyr	Lys	Thr
145	Thr	Arg	Val	Asn	Lys	Pro	150	Ser	Val	Glu	Gly	155	Thr	Arg	Thr	Phe	Asp	Gln
Tyr	Trp	Ser	160	Val	Arg	Gln	Ala	Lys	Arg	165	Thr	Gly	Gly	Thr	Ile	Thr	Thr	
Gly	Asn	His	170	Phe	Asp	Ala	Trp	Ala	Arg	175	Ala	Gly	Met	Pro	180	Leu	Gly	Asn
Phe	Ser	185	Tyr	Tyr	Met	Ile	Met	Ala	Thr	Glu	Gly	Tyr	200	Gln	Ser	Ser	Gly	
Ser	Ser	Ser	205	Ile	Asn	Val	Gly	Gly	Thr	Gly	Arg	Gly	210	Asp	Asn	Gly	Gly	
225	Gly	Asp	Asn	Gly	Gly	Gly	Gly	Gly	Gly	Cys	215	Thr	Ala	Thr	Val	Ser	Ala	
Gly	Gln	Lys	220	Trp	Gly	Asp	Arg	Tyr	Asn	225	Leu	Asp	Val	Ser	Val	Ser	Gly	
Ala	Ser	Asp	230	Trp	Thr	Val	Thr	Met	Asn	235	Val	Pro	Ser	Pro	Ala	Lys	Val	
Leu	Ser	Thr	240	Trp	Asn	Val	Asn	Ala	Ser	245	Tyr	Pro	Ser	Ser	Ala	Gln	Thr	Leu
Thr	Ala	Arg	250	Ser	Asn	Gly	Ser	Gly	Asn	255	Asn	Trp	Gly	Ala	Thr	Ile	Gln	
305	Ala	Asn	Gly	Asn	Trp	Thr	Trp	Pro	Ser	310	Val	Ser	Cys	Ser	Ala	Gly		
			315							320								
			325							330								

<210> 233
 <211> 1071
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 233

atgtctatgt	ttttgagtct	caaaagagtg	gcggcgctcg	tctgcgtcgc	agggtttggc	60
atttcggcgg	cgaacgctca	gtgcgtcact	tcgagccaga	caggaaccaa	caacgggttc	120
tatttttcgt	tctggaaaga	tagtccggga	accgtgaatt	tctgcaacca	gagcgggtggc	180
cgctacacat	ccaattggag	cggtatcaac	aactgggtcg	gtggcaaggg	ttggcagacc	240
ggctcgcgaa	gggtcgtgag	ctactccggt	tcgttcaatt	cgccgggcaa	cggttatctg	300
accctctatg	ggtggaccac	caatccgctc	atcgagtact	acatcgtcga	caactggggc	360
tcgtatcgcc	cgccgggagg	acaggggttc	atgggcacgg	tgaccagcga	cggcggcacg	420
tacgatgtct	accgcacaca	gcgcgtcaat	caaccctgca	tcaccggcag	cagttgcacc	480
ttctatcaat	actggagcgt	gcggcagtcg	aagagaacgg	gcggcacgat	cacgacgggc	540
aatcactttg	acgcgtgggc	gagttacggc	atgaacctgg	gcgctcacia	ctaccagatc	600
atggcgaccg	agggttatca	aagcagcggg	agctctgaca	tcacgggtcag	tgaaggcagc	660
agcagtagca	gcagtagcag	cagttcgagc	agtagctcga	gcagcagctc	cagcagcagc	720
agcggcgggc	gtggcaccaa	gagcttcacg	gtccgcgcgc	gcggcggtggc	cgccggggaa	780
tccatcacgt	tgcgcgtgaa	caatcagaac	gtgcagacct	ggactctcgg	caccggcatg	840
cagaactaca	cggcgtcgac	gtctttgagt	ggcggcatca	cggttgcgta	taccaacgat	900
ggcggcagtc	gcgacgtgca	ggttgactac	atcatcgtga	acggccagac	gcgtcagtcg	960
gaagcgcaga	gctacaacac	cgggctttat	gccaacggcc	gttgcggtgg	cgccggcaac	1020
agcgaatgga	tgcattgcaa	tggcgccatt	ggctacggga	acacgccgta	g	1071

<210> 234
 <211> 356
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(26)

<400> 234

Met Ser Met Phe Leu Ser Leu Lys Arg Val Ala Ala Leu Val Cys Val
 1 5 10 15
 Ala Gly Phe Gly Ile Ser Ala Ala Asn Ala Gln Cys Val Thr Ser Ser
 20 25 30
 Gln Thr Gly Thr Asn Asn Gly Phe Tyr Phe Ser Phe Trp Lys Asp Ser
 35 40 45
 Pro Gly Thr Val Asn Phe Cys Asn Gln Ser Gly Gly Arg Tyr Thr Ser
 50 55 60
 Asn Trp Ser Gly Ile Asn Asn Trp Val Gly Gly Lys Gly Trp Gln Thr
 65 70 75 80
 Gly Ser Arg Arg Val Val Ser Tyr Ser Gly Ser Phe Asn Ser Pro Gly
 85 90 95
 Asn Gly Tyr Leu Thr Leu Tyr Gly Trp Thr Thr Asn Pro Leu Ile Glu
 100 105 110
 Tyr Tyr Ile Val Asp Asn Trp Gly Ser Tyr Arg Pro Pro Gly Gly Gln
 115 120 125
 Gly Phe Met Gly Thr Val Thr Ser Asp Gly Gly Thr Tyr Asp Val Tyr
 130 135 140
 Arg Thr Gln Arg Val Asn Gln Pro Cys Ile Thr Gly Ser Ser Cys Thr
 145 150 155 160
 Phe Tyr Gln Tyr Trp Ser Val Arg Gln Ser Lys Arg Thr Gly Gly Thr
 165 170 175
 Ile Thr Thr Gly Asn His Phe Asp Ala Trp Ala Ser Tyr Gly Met Asn
 180 185 190
 Leu Gly Ala His Asn Tyr Gln Ile Met Ala Thr Glu Gly Tyr Gln Ser
 195 200 205
 Ser Gly Ser Ser Asp Ile Thr Val Ser Glu Gly Ser Ser Ser Ser
 210 215 220
 Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser
 225 230 235 240
 Ser Gly Gly Gly Gly Thr Lys Ser Phe Thr Val Arg Ala Arg Gly Val
 245 250 255
 Ala Gly Gly Glu Ser Ile Thr Leu Arg Val Asn Asn Gln Asn Val Gln
 260 265 270
 Thr Trp Thr Leu Gly Thr Gly Met Gln Asn Tyr Thr Ala Ser Thr Ser
 275 280 285
 Leu Ser Gly Gly Ile Thr Val Ala Tyr Thr Asn Asp Gly Gly Ser Arg
 290 295 300
 Asp Val Gln Val Asp Tyr Ile Ile Val Asn Gly Gln Thr Arg Gln Ser
 305 310 315 320
 Glu Ala Gln Ser Tyr Asn Thr Gly Leu Tyr Ala Asn Gly Arg Cys Gly
 325 330 335
 Gly Gly Gly Asn Ser Glu Trp Met His Cys Asn Gly Ala Ile Gly Tyr
 340 345 350
 Gly Asn Thr Pro
 355

<210> 235

<211> 1539

<212> DNA

<213> Unknown

<220>

<223> obtained from an environmental sample

<400> 235

atgtcgaata	acagatttgt	gctgaatcgt	gttgctgcag	gtttgctgct	gggtttctcg	60
ctgctgtcat	cagcagccat	cgcccagaat	gtgggtgtaa	atccttctac	ggtccatcag	120
accgtgcgcg	gctttggcgg	catgaacgcg	ccgggctgga	ttgatgacct	taccaccgcc	180
cagggtcaata	aggcctatgg	cagtggcgat	ggccagggtcg	ggctctccat	catgcgcatg	240
cgcatgtgatc	cgaactcggc	agcctggaat	atccagggtgc	cggtcgccaa	gcgggccaag	300
gagctgggtg	cgatcctgtt	tgccacgccc	tggtcgccgc	ccgcctacat	gaaatccaac	360
aaaagcctga	ataacggcgg	caagctgctg	cccagatatt	acagcgcccta	caccaccac	420
ctgctggatt	ttgcgagttt	catgtcgcgc	aacggcgcac	cgctgtatgc	gatttcaatc	480
cagaacgaac	cggactggct	gccggattat	gagtcgtgtg	cctggactgg	tactgatttc	540
gtcaattatc	tgaataacca	gggctcgcgt	tttgggtgatc	tgaaagtgat	tgcgccggaa	600
tccctgggtt	tcacgacctc	gtattccgac	cccataccta	acagcgccac	ggcagcgccg	660
catgtcgaca	tcatcggcgg	ccacctctac	ggcgtgctgc	ccaaggacta	cccgtggtgc	720

cgccagaagg	gcaaggaaat	ctggatgacc	gagcattaca	ccgagagcaa	gaactcgggt	780
gatgcctggc	cgctggcgct	ggacgtaggc	accgagctgc	accagagcat	ggtggccaac	840
tacaacgcct	acgtgtgggtg	gtatgtgctg	cgcagctacg	gcctgctgct	ggagaacggc	900
aatgtgagca	agcgcggcta	catcatgtcg	cagtacgcac	gcttcgtccg	ccccggctcc	960
aagcgcatcg	gcgcgacgga	aaagccgcac	gccgacgtgg	cggtgacggc	ctacaagacg	1020
ccggataacc	gcatttgcct	ggtggcggtg	aataccgggtg	cggcgcaccg	tcagctgaac	1080
atcacggtgc	cgagcggcag	cgtgggttct	ttcagcaagt	tctccacttc	cggcacgctg	1140
aatgtgggca	gtggtggcag	ctacaaggct	aacaacggcg	cggtgagcct	gtacatcgat	1200
ccgcagagcg	tggccacgct	ggtgggtgat	ctgcccggca	cggcctccag	ctcttcggcg	1260
gcgtcctcgt	cctcttccag	tgcagccagc	tctgcttcga	gcagtgctag	cggcgcaccg	1320
gccctgtctg	gcagcagcga	ttacccccacg	ggcttcagca	agtgcgctga	tctgggtggt	1380
acttgtgccg	tgccttcggg	ctcgggctgg	acggctttcg	ggcgcaaggg	caagtgggtt	1440
gccaaagtacg	tcggtgtggg	caagagcatt	gcctgcacgg	tgacggcttt	cggcagcgat	1500
cccgggtggtg	cacccaacaa	gtgttcttac	cagaagtaa			1539

<210> 236

<211> 512

<212> PRT

<213> Unknown

<220>

<223> obtained from an environmental sample

<221> SIGNAL

<222> (1)...(28)

<400> 236

Met	Ser	Asn	Asn	Arg	Phe	Val	Leu	Asn	Arg	Val	Ala	Ala	Gly	Leu	Leu
1				5				10						15	
Leu	Gly	Phe	Ser	Leu	Leu	Ser	Ser	Ala	Ala	Ile	Ala	Gln	Asn	Val	Val
			20					25					30		
Val	Asn	Pro	Ser	Thr	Val	His	Gln	Thr	Val	Arg	Gly	Phe	Gly	Gly	Met
		35					40					45			
Asn	Ala	Pro	Gly	Trp	Ile	Asp	Asp	Leu	Thr	Thr	Ala	Gln	Val	Asn	Lys
		50				55					60				
Ala	Tyr	Gly	Ser	Gly	Asp	Gly	Gln	Val	Gly	Leu	Ser	Ile	Met	Arg	Met
65					70				75					80	
Arg	Ile	Asp	Pro	Asn	Ser	Ala	Ala	Trp	Asn	Ile	Gln	Val	Pro	Ala	Ala
				85					90					95	
Lys	Arg	Ala	Lys	Glu	Leu	Gly	Ala	Ile	Leu	Phe	Ala	Thr	Pro	Trp	Ser
			100					105					110		
Pro	Pro	Ala	Tyr	Met	Lys	Ser	Asn	Lys	Ser	Leu	Asn	Asn	Gly	Gly	Lys
		115					120					125			
Leu	Leu	Pro	Glu	Tyr	Tyr	Ser	Ala	Tyr	Thr	Thr	His	Leu	Leu	Asp	Phe
		130				135					140				
Ala	Ser	Phe	Met	Ser	Arg	Asn	Gly	Ala	Pro	Leu	Tyr	Ala	Ile	Ser	Ile
145					150					155					160
Gln	Asn	Glu	Pro	Asp	Trp	Leu	Pro	Asp	Tyr	Glu	Ser	Cys	Ala	Trp	Thr
				165					170					175	
Gly	Thr	Asp	Phe	Val	Asn	Tyr	Leu	Asn	Thr	Gln	Gly	Ser	Arg	Phe	Gly
			180					185					190		
Asp	Leu	Lys	Val	Ile	Ala	Pro	Glu	Ser	Leu	Gly	Phe	Thr	Thr	Ser	Tyr
		195					200					205			
Ser	Asp	Pro	Ile	Leu	Asn	Ser	Ala	Thr	Ala	Ala	Pro	His	Val	Asp	Ile
		210				215					220				
Ile	Gly	Gly	His	Leu	Tyr	Gly	Val	Leu	Pro	Lys	Asp	Tyr	Pro	Leu	Ala
225					230					235					240
Arg	Gln	Lys	Gly	Lys	Glu	Ile	Trp	Met	Thr	Glu	His	Tyr	Thr	Glu	Ser
				245					250					255	
Lys	Asn	Ser	Gly	Asp	Ala	Trp	Pro	Leu	Ala	Leu	Asp	Val	Gly	Thr	Glu
			260					265					270		
Leu	His	Gln	Ser	Met	Val	Ala	Asn	Tyr	Asn	Ala	Tyr	Val	Trp	Trp	Tyr
		275					280					285			
Val	Arg	Arg	Ser	Tyr	Gly	Leu	Leu	Glu	Asn	Gly	Asn	Val	Ser	Lys	
		290				295				300					
Arg	Gly	Tyr	Ile	Met	Ser	Gln	Tyr	Ala	Arg	Phe	Val	Arg	Pro	Gly	Ser
305					310					315					320
Lys	Arg	Ile	Gly	Ala	Thr	Glu	Lys	Pro	His	Ala	Asp	Val	Ala	Val	Thr
				325					330					335	

Ala Tyr Lys Thr Pro Asp Asn Arg Ile Val Leu Val Ala Val Asn Thr
 340 345 350
 Gly Ala Ala His Arg Gln Leu Asn Ile Thr Val Pro Ser Gly Ser Val
 355 360 365
 Gly Ser Phe Ser Lys Phe Ser Thr Ser Gly Thr Leu Asn Val Gly Ser
 370 375 380
 Gly Gly Ser Tyr Lys Val Asn Asn Gly Ala Val Ser Leu Tyr Ile Asp
 385 390 395 400
 Pro Gln Ser Val Ala Thr Leu Val Gly Asp Leu Pro Gly Thr Ala Ser
 405 410 415
 Ser Ser Ser Ala Ala Ser Ser Ser Ser Ser Ser Ala Ala Ser Ser Ala
 420 425 430
 Ser Ser Ser Ala Ser Gly Ala Pro Ala Leu Ser Gly Ser Ser Asp Tyr
 435 440 445
 Pro Thr Gly Phe Ser Lys Cys Ala Asp Leu Gly Gly Thr Cys Ala Val
 450 455 460
 Pro Ser Gly Ser Gly Trp Thr Ala Phe Gly Arg Lys Gly Lys Trp Val
 465 470 475 480
 Ala Lys Tyr Val Gly Val Gly Lys Ser Ile Ala Cys Thr Val Thr Ala
 485 490 495
 Phe Gly Ser Asp Pro Gly Gly Ala Pro Asn Lys Cys Ser Tyr Gln Lys
 500 505 510

<210> 237

<211> 1269

<212> DNA

<213> Unknown

<220>

<223> obtained from an environmental sample

<400> 237

atgattccac	gcataaaaaa	aacaatttgt	gtactattag	tatgtttcac	tatgctgtca	60
gtcatgttag	ggccaggcgc	tactgaagtt	ttggcagcaa	gtgatgtaac	agttaatgta	120
tctgcagaga	aacaagtgat	tcgcggtttt	ggagggatga	atcatccggc	ttgggctggg	180
gatcttacag	cagctcaaag	agaaactgct	tttggcaatg	gacagaacca	gttaggattt	240
tcaatcttaa	gaattcatgt	agatgaaaat	cgaaataatt	ggtataaaga	ggtggagact	300
gcaaagagtg	cgggtcaaaca	cggagcaatc	gtttttgctt	ctccttgga	tcctccaagt	360
gatatgggtg	agacctttta	tcggaatggt	gacacatcgg	ctaaacggct	gaaatacaac	420
aagtacgcag	catacgcgca	gcattcttaac	gattttgtta	ccttcattgaa	gaataatggt	480
gtgaatcttt	acgcgatttc	ggtccaaaac	gagcctgatt	acgctcacga	gtggacgtgg	540
tggacgccgc	aagaaataact	tcgcttttatg	agagaaaacg	ccggctcgat	caatgcccg	600
gtcattgcgc	ctgagtcatt	tcaataacttg	aagaatttgt	cggacccgat	cttgaacgat	660
ccgcaggctc	ttgccaatat	ggatattctc	ggaactcacc	tgtacggcac	ccaggtcagc	720
caattccctt	atcctctttt	caaacaaaaa	ggagcgggga	aggacctttg	gatgacggaa	780
gtatactatc	caaacagtga	taccaactcg	gcggatcgat	ggcctgaggc	attggatggt	840
tcacagcata	ttcacaatgc	gatggtagag	ggggactttc	aagcttatgt	atgggtgtac	900
atccgaagat	catatggacc	tatgaaagaa	gatggtacga	tcagcaaacg	cggctacaat	960
atgggtcatt	tctcaaagtt	tgtgcgtccc	ggctatgtaa	ggattgatgc	aacgaaaaac	1020
cctaattgca	acgtttacgt	gtcagcctat	aaaggtgaca	acaaggtcgt	tattgttgcc	1080
atcaataaaaa	gcaacacagg	agtcaaccaa	aactttgttt	tgcagaatgg	atctgcttca	1140
aacgtatcta	gatggatcac	gagcagcagc	agcaatctac	aacctggaac	gaatctcact	1200
gtatcaggca	atcatttttg	ggctcatctt	ccagctcaaa	gcgtgacaac	atttgttgta	1260
aatcggttaa						1269

<210> 238

<211> 422

<212> PRT

<213> Unknown

<220>

<223> obtained from an environmental sample

<221> SIGNAL

<222> (1)...(32)

<400> 238

Met Ile Pro Arg Ile Lys Lys Thr Ile Cys Val Leu Leu Val Cys Phe
 1 5 10 15

Thr Met Leu Ser Val Met Leu Gly Pro Gly Ala Thr Glu Val Leu Ala
 20 25 30
 Ala Ser Asp Val Thr Val Asn Val Ser Ala Glu Lys Gln Val Ile Arg
 35 40 45
 Gly Phe Gly Gly Met Asn His Pro Ala Trp Ala Gly Asp Leu Thr Ala
 50 55 60
 Ala Gln Arg Glu Thr Ala Phe Gly Asn Gly Gln Asn Gln Leu Gly Phe
 65 70 75 80
 Ser Ile Leu Arg Ile His Val Asp Glu Asn Arg Asn Asn Trp Tyr Lys
 85 90 95
 Glu Val Glu Thr Ala Lys Ser Ala Val Lys His Gly Ala Ile Val Phe
 100 105 110
 Ala Ser Pro Trp Asn Pro Pro Ser Asp Met Val Glu Thr Phe Asn Arg
 115 120 125
 Asn Gly Asp Thr Ser Ala Lys Arg Leu Lys Tyr Asn Lys Tyr Ala Ala
 130 135 140
 Tyr Ala Gln His Leu Asn Asp Phe Val Thr Phe Met Lys Asn Asn Gly
 145 150 155 160
 Val Asn Leu Tyr Ala Ile Ser Val Gln Asn Glu Pro Asp Tyr Ala His
 165 170 175
 Glu Trp Thr Trp Trp Thr Pro Gln Glu Ile Leu Arg Phe Met Arg Glu
 180 185 190
 Asn Ala Gly Ser Ile Asn Ala Arg Val Ile Ala Pro Glu Ser Phe Gln
 195 200 205
 Tyr Leu Lys Asn Leu Ser Asp Pro Ile Leu Asn Asp Pro Gln Ala Leu
 210 215 220
 Ala Asn Met Asp Ile Leu Gly Thr His Leu Tyr Gly Thr Gln Val Ser
 225 230 235 240
 Gln Phe Pro Tyr Pro Leu Phe Lys Gln Lys Gly Ala Gly Lys Asp Leu
 245 250 255
 Trp Met Thr Glu Val Tyr Tyr Pro Asn Ser Asp Thr Asn Ser Ala Asp
 260 265 270
 Arg Trp Pro Glu Ala Leu Asp Val Ser Gln His Ile His Asn Ala Met
 275 280 285
 Val Glu Gly Asp Phe Gln Ala Tyr Val Trp Trp Tyr Ile Arg Arg Ser
 290 295 300
 Tyr Gly Pro Met Lys Glu Asp Gly Thr Ile Ser Lys Arg Gly Tyr Asn
 305 310 315 320
 Met Ala His Phe Ser Lys Phe Val Arg Pro Gly Tyr Val Arg Ile Asp
 325 330 335
 Ala Thr Lys Asn Pro Asn Ala Asn Val Tyr Val Ser Ala Tyr Lys Gly
 340 345 350
 Asp Asn Lys Val Val Ile Val Ala Ile Asn Lys Ser Asn Thr Gly Val
 355 360 365
 Asn Gln Asn Phe Val Leu Gln Asn Gly Ser Ala Ser Asn Val Ser Arg
 370 375 380
 Trp Ile Thr Ser Ser Ser Ser Asn Leu Gln Pro Gly Thr Asn Leu Thr
 385 390 395 400
 Val Ser Gly Asn His Phe Trp Ala His Leu Pro Ala Gln Ser Val Thr
 405 410 415
 Thr Phe Val Val Asn Arg
 420

<210> 239
 <211> 1281
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 239
 atgaatcgtt tcttgatttc acgttataag aaagccataa gtgcatgttt ggcccttgtc 60
 cttagcgttg ctctcatggc ggcacctggc gatgttgccg cagccagcga cgccgttata 120
 aatgtatcgt cggagaaaca agtgatacgc ggtttcggag gcatcaacca cccggcatgg 180
 atcggagatt tgacggcagc acagagagaa accgcatttg ggaacgggcc aaatcagtta 240
 ggcttctcga tattaagaat ctacgtgcat gaagaccgaa atcagtggca ccgtgaactg 300
 gatacggcca aacgagcgat tgcccttggg gctatcgat tcgcttcgcc atggaatccg 360
 cccgccgaca tggtcgagac cttaaccgc aacggcgata cgtcggcaaa gcgacttcgt 420

tacgacaagt	ataccgccta	tgcccagcat	cttaacgatt	tcgtaacct	catgagaaac	480
aatggcgtga	atctctacgc	gattttccgtc	cagaacgagc	cggattatgc	gcatgactgg	540
acgtgggtgga	ctccgcagga	aatgcttcgc	tttatgaaag	aaaatgccgg	atcgatcaac	600
agcagagtga	tgcgaccgga	atcgttccaa	tatctgaaaa	atatgtcggg	cccgattcta	660
aatgatcccc	aggcgcttgc	caatatggat	attcttggcg	ctcatctgta	cggtagccaa	720
gttagcaatt	tcgcttatcc	actattcaaa	caaaaaggag	cgggaaaaga	cctctggatg	780
accgaggtgt	attacccgaa	cagcgacaac	aactcggcgg	atcgctggcc	cgaagccctg	840
gatgtgtctt	accatatcca	caatgcgatg	gtagagggag	atcttcaagc	ttatgtatgg	900
tggtatatcc	gcagatccta	tggtccaatg	aaagaggacg	gcacgatcag	caaacgcggc	960
tacaatatgg	ctcattttctc	caagtttgtc	cgtcccggct	atgtcagggt	ggatgcttcg	1020
aaaaatccag	aaacgaacgt	ttacgtatcc	gcatataaag	gcgacaacaa	aatcgttatc	1080
gttgccataa	accggaacaa	ctccgggggtc	aatcagaact	ttgtccttca	gaatggatcc	1140
gtttcgcagg	tatcaaggtg	gatcacgagc	agcagcagca	atctccagcc	aggaacgtct	1200
ctcaatgtaa	cagggagcaa	tttctgggct	catcttcccg	cgaaagcgt	tacgactttt	1260
gtgggtgaac	tcggaaggtg	a				1281

<210> 240

<211> 426

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample

<221> SIGNAL

<222> (1)...(30)

<400> 240

Met	Asn	Arg	Phe	Leu	Ile	Ser	Arg	Tyr	Lys	Lys	Ala	Ile	Ser	Ala	Cys
1				5					10					15	
Leu	Ala	Leu	Val	Leu	Ala	Leu	Ser	Leu	Met	Ala	Ala	Pro	Gly	Asp	Val
			20					25					30		
Ala	Ala	Ala	Ser	Asp	Ala	Val	Ile	Asn	Val	Ser	Ser	Glu	Lys	Gln	Val
			35				40						45		
Ile	Arg	Gly	Phe	Gly	Gly	Ile	Asn	His	Pro	Ala	Trp	Ile	Gly	Asp	Leu
	50					55					60				
Thr	Ala	Ala	Gln	Arg	Glu	Thr	Ala	Phe	Gly	Asn	Gly	Pro	Asn	Gln	Leu
65					70					75					80
Gly	Phe	Ser	Ile	Leu	Arg	Ile	Tyr	Val	His	Glu	Asp	Arg	Asn	Gln	Trp
				85					90					95	
His	Arg	Glu	Leu	Asp	Thr	Ala	Lys	Arg	Ala	Ile	Ala	Leu	Gly	Ala	Ile
			100					105						110	
Val	Phe	Ala	Ser	Pro	Trp	Asn	Pro	Pro	Ala	Asp	Met	Val	Glu	Thr	Phe
			115				120					125			
Asn	Arg	Asn	Gly	Asp	Thr	Ser	Ala	Lys	Arg	Leu	Arg	Tyr	Asp	Lys	Tyr
	130					135						140			
Thr	Ala	Tyr	Ala	Gln	His	Leu	Asn	Asp	Phe	Val	Thr	Tyr	Met	Arg	Asn
145					150					155					160
Asn	Gly	Val	Asn	Leu	Tyr	Ala	Ile	Ser	Val	Gln	Asn	Glu	Pro	Asp	Tyr
				165					170					175	
Ala	His	Asp	Trp	Thr	Trp	Trp	Thr	Pro	Gln	Glu	Met	Leu	Arg	Phe	Met
			180					185					190		
Lys	Glu	Asn	Ala	Gly	Ser	Ile	Asn	Ser	Arg	Val	Ile	Ala	Pro	Glu	Ser
		195					200					205			
Phe	Gln	Tyr	Leu	Lys	Asn	Met	Ser	Asp	Pro	Ile	Leu	Asn	Asp	Pro	Gln
	210					215					220				
Ala	Leu	Ala	Asn	Met	Asp	Ile	Leu	Gly	Ala	His	Leu	Tyr	Gly	Thr	Gln
225					230					235					240
Val	Ser	Asn	Phe	Ala	Tyr	Pro	Leu	Phe	Lys	Gln	Lys	Gly	Ala	Gly	Lys
				245					250					255	
Asp	Leu	Trp	Met	Thr	Glu	Val	Tyr	Tyr	Pro	Asn	Ser	Asp	Asn	Asn	Ser
			260					265					270		
Ala	Asp	Arg	Trp	Pro	Glu	Ala	Leu	Asp	Val	Ser	Tyr	His	Ile	His	Asn
		275					280					285			
Ala	Met	Val	Glu	Gly	Asp	Phe	Gln	Ala	Tyr	Val	Trp	Trp	Tyr	Ile	Arg
	290					295					300				
Arg	Ser	Tyr	Gly	Pro	Met	Lys	Glu	Asp	Gly	Thr	Ile	Ser	Lys	Arg	Gly
305					310					315					320
Tyr	Asn	Met	Ala	His	Ser	Lys	Phe	Val	Arg	Pro	Gly	Tyr	Val	Arg	

Val Asp Ala Ser Lys Asn Pro Glu Thr Asn Val Tyr Val Ser Ala Tyr
 325 340 345 350 355 360 365 380 390 395 400 415
 Lys Gly Asp Asn Lys Ile Val Ile Val Ala Ile Asn Arg Asn Asn Ser
 Gly Val Asn Gln Asn Phe Val Leu Gln Asn Gly Ser Val Ser Gln Val
 370 375 380 390 395 400 415
 Ser Arg Trp Ile Thr Ser Ser Ser Ser Asn Leu Gln Pro Gly Thr Ser
 385 405 410 415
 Leu Asn Val Thr Gly Ser Asn Phe Trp Ala His Leu Pro Ala Gln Ser
 420 425

<210> 241
 <211> 1695
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 241
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 ttaacagccc tgccctctcat gttaacgccg acacacgtat cagcagcaag tgatgccaac 120
 attaatitgt cctccgaaaa acagcttatt aaggggtttg gaggtattaa ccacccagcc 180
 tggattggcg acttgacggc agctcagcgt gaaacagcct ttggcaacgg agcgaaccag 240
 cttggttttt ccataactaag aatctatgtc gatgaaaatc caaacaactg gtacagggag 300
 gtggctactg ccaaaaagagc catagagcaa ggtgccatcg tattcgcttc tccctggaat 360
 ccaccaagtg acatggctga aaccttcaat cggaacgggg atacgaacgc caaacgattg 420
 agatacgaca aatatgctgc gtacgcgcag catctgaacg actttgtcag ttatatgaaa 480
 aataacggtg tggatctgta tgccatttcg gtacaaaatg agccggatta tgcccatgaa 540
 tggacctgtg ggactccgca ggagatcctt cgtttcatga aggagaatgc gggatccatt 600
 cagaatacca aagtcattggc acctgaatcg ttccagtatt tgaaaaacat gtctgacccg 660
 attctgaatg atcctcaggc actcgccaat atggacattc tgggagctca tacgtacggg 720
 acacagttca aagatttcgc ataccgcgtc ttttaagcaa agggagccgg caaagaactg 780
 tggatgacag aagtgtatta cccgaacagc gataacaact cgtcggaccg ttggcctgag 840
 gcattggacg tatcttacc aatgcataat gccatgggtg aaggagattt tcaggcttac 900
 gtatgggtgt atattcggag acagtacggt ccgatgaatg agaacgggac tattagcaaa 960
 cgtggttaca atatggcca tttctccaaa tttgtgcgac caggctatta ccgtgtcgat 1020
 gcaaccaaaa atccggatac caataccttc gtctcagcct ataaaggatga taataaggca 1080
 gtcattgtgg cgattaatcg cggcacctcg gctgtaagcc aaaaattcgt tcttcagaat 1140
 ggtaacgctt ctactgtatc ctcttgggtt acggatagca gccgaaacct ggcaagcgga 1200
 gcgcccatta cgatgtcagg tggagccttt acagcacaac tgccagccca aagcgtaaca 1260
 acgtttgtag ccaacattac tgggtggtagt gtcactccag gcagcggaa caggtacgag 1320
 gcggaacagg gcactacact taccgatgcc gtgatcgaga actggttcgg ccattcaatg gaatgccatc 1380
 gggaccggat acgtgaactt taatgcgtat actggttcgg aaatttcgtt acgcccagga aagcggaaac 1440
 aataacacga taacaggtac caaaaatgtg aaatttcgtt acgcccagga aagcggaaac 1500
 cgtaatctcg acattttcgt taacggaaact aaagtcatca gcaacgaacc tttcccggca 1560
 acaggcagct ggtcgacctg gagtgaaaaa actattcagg tccccatgaa cgcgggaacc 1620
 aatacgatta aagtggtcac aaccgggtaca gaagggccaa atattgataa catcaatgtc 1680
 actgcagtcc aataa 1695

<210> 242
 <211> 564
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(28)

<400> 242
 Val Lys Ile Leu Lys Phe Lys Met Asn Leu Lys Lys Ser Val His Val
 1 5 10 15
 Leu Leu Ala Cys Leu Thr Ala Leu Pro Leu Met Leu Thr Pro Thr His
 20 25 30

Val Ser Ala Ala Ser Asp Ala Asn Ile Asn Leu Ser Ser Glu Lys Gln
 35 40 45
 Leu Ile Lys Gly Phe Gly Gly Ile Asn His Pro Ala Trp Ile Gly Asp
 50 55 60
 Leu Thr Ala Ala Gln Arg Glu Thr Ala Phe Gly Asn Gly Ala Asn Gln
 65 70 75 80
 Leu Gly Phe Ser Ile Leu Arg Ile Tyr Val Asp Glu Asn Pro Asn Asn
 85 90 95
 Trp Tyr Arg Glu Val Ala Thr Ala Lys Arg Ala Ile Glu Gln Gly Ala
 100 105 110
 Ile Val Phe Ala Ser Pro Trp Asn Pro Pro Ser Asp Met Val Glu Thr
 115 120 125
 Phe Asn Arg Asn Gly Asp Thr Asn Ala Lys Arg Leu Arg Tyr Asp Lys
 130 135 140
 Tyr Ala Ala Tyr Ala Gln His Leu Asn Asp Phe Val Ser Tyr Met Lys
 145 150 155 160
 Asn Asn Gly Val Asp Leu Tyr Ala Ile Ser Val Gln Asn Glu Pro Asp
 165 170 175
 Tyr Ala His Glu Trp Thr Trp Thr Thr Pro Gln Glu Ile Leu Arg Phe
 180 185 190
 Met Lys Glu Asn Ala Gly Ser Ile Gln Asn Thr Lys Val Met Ala Pro
 195 200 205
 Glu Ser Phe Gln Tyr Leu Lys Asn Met Ser Asp Pro Ile Leu Asn Asp
 210 215 220
 Pro Gln Ala Leu Ala Asn Met Asp Ile Leu Gly Ala His Thr Tyr Gly
 225 230 235 240
 Thr Gln Phe Lys Asp Phe Ala Tyr Pro Leu Phe Lys Gln Lys Gly Ala
 245 250 255
 Gly Lys Glu Leu Trp Met Thr Glu Val Tyr Tyr Pro Asn Ser Asp Asn
 260 265 270
 Asn Ser Ser Asp Arg Trp Pro Glu Ala Leu Asp Val Ser Tyr His Met
 275 280 285
 His Asn Ala Met Val Glu Gly Asp Phe Gln Ala Tyr Val Trp Trp Tyr
 290 295 300
 Ile Arg Arg Gln Tyr Gly Pro Met Asn Glu Asn Gly Thr Ile Ser Lys
 305 310 315 320
 Arg Gly Tyr Asn Met Ala His Phe Ser Lys Phe Val Arg Pro Gly Tyr
 325 330 335
 Tyr Arg Val Asp Ala Thr Lys Asn Pro Asp Thr Asn Thr Phe Val Ser
 340 345 350
 Ala Tyr Lys Gly Asp Asn Lys Ala Val Ile Val Ala Ile Asn Arg Gly
 355 360 365
 Thr Ser Ala Val Ser Gln Lys Phe Val Leu Gln Asn Gly Asn Ala Ser
 370 375 380
 Thr Val Ser Ser Trp Val Thr Asp Ser Ser Arg Asn Leu Ala Ser Gly
 385 390 395 400
 Ala Pro Ile Thr Met Ser Gly Gly Ala Phe Thr Ala Gln Leu Pro Ala
 405 410 415
 Gln Ser Val Thr Thr Phe Val Ala Asn Ile Thr Gly Gly Ser Val Thr
 420 425 430
 Pro Gly Ser Gly Thr Thr Tyr Glu Ala Glu Thr Gly Thr Thr Leu Thr
 435 440 445
 Asp Ala Val Ile Glu Thr Leu Tyr Pro Gly Tyr Thr Gly Thr Gly Tyr
 450 455 460
 Val Asn Phe Asn Ala Tyr Thr Gly Ser Ala Ile Gln Trp Asn Ala Ile
 465 470 475 480
 Asn Asn Thr Ile Thr Gly Thr Lys Asn Val Lys Phe Arg Tyr Ala Gln
 485 490 495
 Glu Ser Gly Thr Arg Asn Leu Asp Ile Phe Val Asn Gly Thr Lys Val
 500 505 510
 Ile Ser Asn Glu Pro Phe Pro Ala Thr Gly Ser Trp Ser Thr Trp Ser
 515 520 525
 Glu Lys Thr Ile Gln Val Pro Met Asn Ala Gly Thr Asn Thr Ile Lys
 530 535 540
 Val Val Thr Thr Gly Thr Glu Gly Pro Asn Ile Asp Asn Ile Asn Val
 545 550 555 560
 Thr Ala Val Gln

<210> 243
 <211> 1272
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 243
 atgattttcaa gcgtaaaaaa accaattttgt gtattattgg tatgtttcac tatgctgtca 60
 gtcattgttag ccggggccagg tgctactgaa gtttttagcag caagtgatgt aacaattaat 120
 ttatctgcag aaaaacaagt gatccgcggg tttggaggca tgaaccaccc ggcttggatt 180
 ggagatttga cagcagctca aagagaaacc gcttttggca atggacagaa tcagttaggt 240
 ttttcaatct taagaattca tgtggatgaa aatagaaata attggtacag agaagtggag 300
 actgcaaaga gtgcgatcaa acatggagca atcgtttttg cttctccctg gaatcctcca 360
 agcgatattg ttgagacttt caatcgtaat ggtgacacat cagctaaacg gctaagatac 420
 gataagtacg ccgcatacgc gcagcatctt aacgattttg ttacctacat gaagaataat 480
 ggcgatgaatc tttatgcatg ttctgttcaa aacgagcctg attatgacga cgaatggacg 540
 tgggtggactc cgcaagaaat acttcgtttc atgagagaaa atgccggttc cattaatgca 600
 cgtgtcattg caccagaatc ttttcagtac tttaaaaaata tatcggaccc cattttgaac 660
 gatccacagg cgcttaggaa tatggatatt ctcggaactc acctgtacgg tactcagggtc 720
 agtcagtttc cttatcctct attcaaaca aaaggagcag ggaaagagct atggatgacg 780
 gaagtatact atccaaacga tgacaacaat tcagcggatc gctggcccga ggcattaggg 840
 gtttcagagc atattcacca ttcaatgggtg gagggagatt ttcaatctta tgtttgggtg 900
 tacatccgca gatcttacgg tcctatgaaa gaggacggta cgatcagcaa acgcgggtac 960
 aatatggctc atttctcgaa gtttgtgcgt cccggctatg taagggtaga tgcaacgaaa 1020
 aatcctaata cgaacgttta cgtgtcagcc tataaagggtg acaacaagggt cgttattggt 1080
 gccattaaca aaagcaatac aggggtcaac caaaactttg tggtgcagaa tggatctgct 1140
 tctcaggtat ctagggtgat aacaagcgga agcagcaatc ttcaacctgg aacgaatctc 1200
 aatgtaacgg gcaatcattt ttgggcccac cttccagctc aaagcgtgac aacatttgtc 1260
 gcaaatcgtt aa 1272

<210> 244
 <211> 423
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(33)

<400> 244
 Met Ile Ser Ser Val Lys Lys Pro Ile Cys Val Leu Leu Val Cys Phe
 1 5 10 15
 Thr Met Leu Ser Val Met Leu Ala Gly Pro Gly Ala Thr Glu Val Leu
 20 25 30
 Ala Ala Ser Asp Val Thr Ile Asn Leu Ser Ala Glu Lys Gln Val Ile
 35 40 45
 Arg Gly Phe Gly Gly Met Asn His Pro Ala Trp Ile Gly Asp Leu Thr
 50 55 60
 Ala Ala Gln Arg Glu Thr Ala Phe Gly Asn Gly Gln Asn Gln Leu Gly
 65 70 75 80
 Phe Ser Ile Leu Arg Ile His Val Asp Glu Asn Arg Asn Asn Trp Tyr
 85 90 95
 Arg Glu Val Glu Thr Ala Lys Ser Ala Ile Lys His Gly Ala Ile Val
 100 105 110
 Phe Ala Ser Pro Trp Asn Pro Pro Ser Asp Met Val Glu Thr Phe Asn
 115 120 125
 Arg Asn Gly Asp Thr Ser Ala Lys Arg Leu Arg Tyr Asp Lys Tyr Ala
 130 135 140
 Ala Tyr Ala Gln His Leu Asn Asp Phe Val Thr Tyr Met Lys Asn Asn
 145 150 155 160
 Gly Val Asn Leu Tyr Ala Ile Ser Val Gln Asn Glu Pro Asp Tyr Ala
 165 170 175
 His Glu Trp Thr Trp Trp Thr Pro Gln Glu Ile Leu Arg Phe Met Arg
 180 185 190
 Glu Asn Ala Gly Ser Ile Asn Ala Arg Val Ile Ala Pro Glu Ser Phe
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195	Gln Tyr Phe Lys Asn Ile Ser	200	Asp Pro Ile Leu Asn Asp Pro Gln Ala
210	Leu Arg Asn Met Asp Ile Leu	215	Gly Thr His Leu Tyr Gly Thr Gln Val
225	Ser Gln Phe Pro Tyr Pro Leu Phe	230	Lys Gln Lys Gly Ala Gly Lys Glu
245	Leu Trp Met Thr Glu Val Tyr Tyr	250	Pro Asn Ser Asp Asn Asn Ser Ala
260	Asp Arg Trp Pro Glu Ala Leu Gly	265	Val Ser Glu His Ile His His Ser
275	Met Val Glu Gly Asp Phe Gln Ser	280	Tyr Val Trp Trp Tyr Ile Arg Arg
290	Ser Tyr Gly Pro Met Lys Glu Asp	295	Gly Thr Ile Ser Lys Arg Gly Tyr
305	Asn Met Ala His Phe Ser Lys Phe	310	Val Arg Pro Gly Tyr Val Arg Val
325	Asp Ala Thr Lys Asn Pro Asn Ala	330	Asn Val Tyr Val Ser Ala Tyr Lys
340	Gly Asp Asn Lys Val Val Ile Val	345	Ala Ile Asn Lys Ser Asn Thr Gly
355	Val Asn Gln Asn Phe Val Leu Gln	360	Asn Gly Ser Ala Ser Gln Val Ser
370	Arg Trp Ile Thr Ser Gly Ser Ser	375	Asn Leu Gln Pro Gly Thr Asn Leu
385	Asn Val Thr Gly Asn His Phe Trp	390	Ala His Leu Pro Ala Gln Ser Val
405	Thr Thr Phe Val Ala Asn Arg	410	
420			

<210> 245
 <211> 1263
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 245

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gcggaaagac	aagtgattcg	cggctttggc	ggaatgaacc	atccggcttg	gattgggtgat	180
ttgaccgcac	ctcaaaggga	aaccgccttt	ggcaatgggc	agaatcaatt	aggattttcc	240
attctaagaa	tttttgtaga	tgagaaccga	aataattggc	acagagaggt	cgctactgcc	300
aaaagagcaa	tagagcatgg	agctttgggtg	atcgcttcac	catggaatcc	tccaagcaat	360
atggtagaga	ccttcaaccg	gaatgggtaca	tctgcaaagc	ggctcagata	caaccaatac	420
gccgcatatg	ctcagcatct	gaacgatttt	gtgacgtata	tgaaaaataa	tggcgtcaat	480
ctctatgcta	tatctgtaca	aaatgagccc	gattatgcac	acgaatggac	atgggtggact	540
cctcagga	tcctgcgttt	catgagagaa	aatgctggct	ccattaatgc	ccgcgtgatc	600
gcaccagaat	cctttcaata	ccttaaaaaat	atatcagatc	ctatcctaaa	cgatccgcag	660
gcgcttgga	acatggacat	tctcggagcc	catttgtacg	gaacccaaat	cagccagctt	720
ccgtatcctc	ttttcaaaca	aaagggaggg	ggaaaggagc	tttggatgac	agaggtctac	780
taccggaata	gcgataacaa	ttcagcggac	cgctggcctg	aagcattagg	ggtttcagag	840
catattcacc	attcgatggg	agaaggggac	tttcaggcat	atgtttgggtg	gtacattcgc	900
agatcctacg	gccctatgaa	agaagacggg	ctaatacagca	aacgtgggta	caacatggcg	960
catttctcca	agtttgtacg	cccaggatac	atcagaattg	atgcaacgaa	aagtcctgaa	1020
ccgaatgttt	tcgtatcagc	ctataaagga	aacaatcaag	tcgtcattgt	cgcgattaac	1080
aaaaacaata	caggagtcaa	tcagcacttt	gtgatgcaaa	acggaactgc	ttcacaagcg	1140
tcaagatgga	tcacaagtag	caacagcaac	cttcagcctg	gtacagactt	aaatatatca	1200
ggtaatcaat	tttgggctca	tctcccggct	caaagtgtga	caacatttgt	ggtcaaacgc	1260
tag						1263

<210> 246
 <211> 401
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
<222> (1)...(32)

<400> 246

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Met Ser Met Ile Lys Lys Pro Ile Cys Thr Leu Leu Ile Cys Phe Thr
 1      5      10      15      20      25      30      35      40      45      50      55      60      65      70      75      80      85      90      95      100      105      110      115      120      125      130      135      140      145      150      155      160      165      170      175      180      185      190      195      200      205      210      215      220      225      230      235      240      245      250      255      260      265      270      275      280      285      290      295      300      305      310      315      320      325      330      335      340      345      350      355      360      365      370      375      380      385      390      395      400
Met Leu Ser Val Met Phe Ile Gly Pro Gly Val Thr Glu Val Ser Ala
Ala Asp Ala Asn Ile Asn Ile Asn Ala Glu Arg Gln Val Ile Arg Gly
Phe Gly Gly Met Asn His Pro Ala Trp Ile Gly Asp Leu Thr Ala Pro
Gln Arg Glu Thr Ala Phe Gly Asn Gly Gln Asn Gln Leu Gly Phe Ser
Ile Leu Arg Ile Phe Val Asp Glu Asn Arg Asn Asn Trp His Arg Glu
Val Ala Thr Ala Lys Arg Ala Ile Glu His Gly Ala Leu Val Ile Ala
Ser Pro Trp Asn Pro Pro Ser Asn Met Val Glu Thr Phe Asn Arg Asn
Gly Thr Ser Ala Lys Arg Leu Arg Tyr Asn Gln Tyr Ala Ala Tyr Ala
Gln His Leu Asn Asp Phe Val Thr Tyr Met Lys Asn Asn Gly Val Asn
Leu Tyr Ala Ile Ser Val Gln Asn Glu Pro Asp Tyr Ala His Glu Trp
Thr Trp Trp Thr Pro Gln Glu Ile Leu Arg Phe Met Arg Glu Asn Ala
Gly Ser Ile Asn Ala Arg Val Ile Ala Pro Glu Ser Phe Gln Tyr Leu
Lys Asn Ile Ser Asp Pro Ile Leu Asn Asp Pro Gln Ala Leu Gly Asn
Met Asp Ile Leu Gly Ala His Leu Tyr Gly Thr Gln Ile Ser Gln Leu
Pro Tyr Pro Leu Phe Lys Gln Lys Gly Gly Lys Glu Leu Trp Met
Thr Glu Val Tyr Tyr Pro Asn Ser Asp Asn Asn Ser Ala Asp Arg Trp
Pro Glu Ala Leu Gly Val Ser Glu His Ile His His Ser Met Val Glu
Gly Asp Phe Gln Ala Tyr Val Trp Trp Tyr Ile Arg Arg Ser Tyr Gly
Pro Met Lys Glu Asp Gly Leu Ile Ser Lys Arg Gly Tyr Asn Met Ala
His Phe Ser Lys Phe Val Arg Pro Gly Tyr Ile Arg Ile Asp Ala Thr
Lys Ser Pro Glu Pro Asn Val Phe Val Ser Ala Tyr Lys Gly Asn Asn
Gln Val Val Ile Val Ala Ile Asn Lys Asn Asn Thr Gly Val Asn Gln
His Phe Val Met Gln Asn Gly Thr Ala Ser Gln Ala Ser Arg Trp Ile
Thr Ser Ser Asn Ser Asn Leu Gln Pro Gly Thr Asp Leu Asn Ile Ser
Gly

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<210> 247
<211> 1044
<212> DNA
<213> Unknown

<220>
<223> obtained from an environmental sample

<400> 247

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gtgtttgcca acgatttcct gataggcgtg gcgctcaact cacggcaggt cgccggggaa
tccgaggccg gaaaactagc tggcgcgcaa ttttcgtcgg tgacggcgga gaatgagatg

```

60
120

aagtggcagt	cgctccatcc	ccagcccgac	cgctatcagt	tcggcgcggc	ggactcctac	180
atcgattttg	ccaaaaaaca	caagatggcg	gtgatcggcc	acacgctcgt	gtggcacagc	240
cagacacccg	gctgggtgtt	cgagggcaag	gacggcaagc	cggcgacccg	cgaggatctg	300
ctcaagcgca	tgcgcgatca	catccacacc	gtggccggac	gctacaaggg	caaggtgcgc	360
ggctgggacg	tgggtcaacga	ggccttggtc	gacggcggtc	ccgaaatcct	gcgggattct	420
ccgtggcggc	gcatcatcgg	cgatgacttc	atcgaccacg	cgttccgttt	cgcccgtgag	480
gccgatccga	aagccgaact	ctactacaac	gactacggtc	tcgagaacga	aaggaagcgg	540
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ggcaccagtg	cgcattttcca	cttgaaacat	ccctcgctcc	aggaaatcga	aaagaccatc	660
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ccgtcgcgtg	gcaattttcgg	caacgccgac	atcagccgcc	gcgagcaggg	cggtgacgca	780
ctcaatcctt	acaccggcgg	cttgcccgat	gaggtccaac	aggaacttgc	gaaacgctat	840
gcggacattt	ttgatatacta	tctgcgccac	cgggaaggcgg	tcacccgcgt	aaccttctgg	900
ggactcgatg	acgggcatac	ctggttgaac	ggtttcccga	tccgcggacg	caccaactat	960
ccgctgttgt	tcgaccgcgc	cctcaagccg	aagcccgcgt	tcgaggcggt	catcaaaaaa	1020
gggcttgaac	ccaggaaacg	ttga				1044

<210> 248

<211> 347

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample

<400> 248

Val	Phe	Ala	Asn	Asp	Phe	Leu	Ile	Gly	Val	Ala	Leu	Asn	Ser	Arg	Gln
1				5					10					15	
Val	Ala	Gly	Glu	Ser	Glu	Ala	Gly	Lys	Leu	Ala	Gly	Ala	Gln	Phe	Ser
			20					25					30		
Ser	Val	Thr	Ala	Glu	Asn	Glu	Met	Lys	Trp	Gln	Ser	Leu	His	Pro	Gln
			35				40					45			
Pro	Asp	Arg	Tyr	Gln	Phe	Gly	Ala	Ala	Asp	Ser	Tyr	Ile	Asp	Phe	Ala
			50			55					60				
Lys	Lys	His	Lys	Met	Ala	Val	Ile	Gly	His	Thr	Leu	Val	Trp	His	Ser
65					70				75					80	
Gln	Thr	Pro	Gly	Trp	Val	Phe	Glu	Gly	Lys	Asp	Gly	Lys	Pro	Ala	Thr
			85					90					95		
Arg	Glu	Asp	Leu	Leu	Lys	Arg	Met	Arg	Asp	His	Ile	His	Thr	Val	Ala
			100					105					110		
Gly	Arg	Tyr	Lys	Gly	Lys	Val	Arg	Gly	Trp	Asp	Val	Val	Asn	Glu	Ala
			115			120						125			
Leu	Ser	Asp	Gly	Gly	Pro	Glu	Ile	Leu	Arg	Asp	Ser	Pro	Trp	Arg	Arg
			130			135					140				
Ile	Ile	Gly	Asp	Asp	Phe	Ile	Asp	His	Ala	Phe	Arg	Phe	Ala	Arg	Glu
145					150				155					160	
Ala	Asp	Pro	Lys	Ala	Glu	Leu	Tyr	Tyr	Asn	Asp	Tyr	Gly	Leu	Glu	Asn
			165						170					175	
Glu	Arg	Lys	Arg	Ser	Asn	Cys	Ile	Lys	Leu	Val	Lys	Gly	Met	Lys	Gln
			180					185					190		
Arg	Gly	Val	Pro	Ile	Asp	Gly	Val	Gly	Thr	Gln	Ser	His	Phe	His	Leu
			195			200						205			
Lys	His	Pro	Ser	Leu	Gln	Glu	Ile	Glu	Lys	Thr	Ile	Lys	Asp	Phe	Ser
			210			215					220				
Glu	Leu	Gly	Leu	Lys	Val	Met	Ile	Thr	Glu	Leu	Asp	Val	Asp	Val	Leu
225					230				235						240
Pro	Ser	Arg	Gly	Asn	Phe	Gly	Asn	Ala	Asp	Ile	Ser	Arg	Arg	Glu	Gln
				245					250					255	
Gly	Gly	Asp	Ala	Leu	Asn	Pro	Tyr	Thr	Gly	Gly	Leu	Pro	Asp	Glu	Val
			260					265					270		
Gln	Gln	Glu	Leu	Ala	Lys	Arg	Tyr	Ala	Asp	Ile	Phe	Asp	Ile	Tyr	Leu
			275					280				285			
Arg	His	Arg	Lys	Ala	Val	Thr	Arg	Val	Thr	Phe	Trp	Gly	Leu	Asp	Asp
			290			295					300				
Gly	His	Thr	Trp	Leu	Asn	Gly	Phe	Pro	Ile	Arg	Gly	Arg	Thr	Asn	Tyr
305					310				315					320	
Pro	Leu	Leu	Phe	Asp	Arg	Ala	Leu	Lys	Pro	Lys	Pro	Ala	Phe	Glu	Ala
				325					330					335	
Val	Ile	Lys	Lys	Gly	Leu	Glu	Pro	Arg	Lys	Arg					

340

345

<210> 249
 <211> 1439
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 249
 tgatcaatcc agtgaaggat cttcgtgaag atttcatctt tggaatggac gtttcaatgc 60
 tctacgagat agagcggctc ggtggtaagt tcttcgatgg tgggtgtggag aaagatcttt 120
 tccagatact gaaggatcat gagataaact ggatcagatt gagagtgtgg aacgatccaa 180
 gggatgaaaa cggaatccg ctcggtgggg gaaactgtga ttatctgaaa atgacagaga 240
 tgcgaaaaag ggcaaaaag tacggaatga aggttcttct tgactttcac tacagcgact 300
 ggtgggcaga tcccggcaag cagtacaaac caaaagagtg ggatcacctt catggagaac 360
 ttctggaaag ggcggtgtat tcctacacga aactcgtgct gaatcatatg agaagaaacg 420
 gtgcactgcc ggacatggtc caggtgggaa acgaggtgaa caacggcttt ctctggccgg 480
 atggaatgat tgccggaaag gatgcaggag gattcgacgg attcacaaaa cttttgaagg 540
 cggccatcaa agccgtcagg gaagttgatc ccgatatcaa gatagtcatt catttggcag 600
 aaggtggaaa caactcactt ttcaggtggt tcttcgacga gatcacaaga agagacgtgg 660
 attttgatgt gatcgggtga tcgtactatc cgtactggca tggtagcctg gatgacctga 720
 agaacaacct gtacgacata gcgaaaagat acaacaaaga cgtgctcatc gttgaaacgg 780
 cgtatgcctg gacactcgag gacggggacg gttaccccaa catcttcagt ggtgaagaga 840
 tggagctcac ggggtggttac aaagcaacgg ttcagggaca ggcaacgttc ttgagggatc 900
 tcatagaagt ggtgaacagt gttcctgacg gtcacggctt tgggatcttc tattgggaag 960
 gagactggat tcctgtgaaa ggagccggct ggaaaaccgg cgaaggaaat ccatgggaga 1020
 atcaggccat gtttgatttc aatggaaatg ctctcccatc cctggatggt ttcaagctcg 1080
 tgaggacagt cactcctatg gaaataaaaa tcgaagagat tctgcctgtg gagatctcga 1140
 cgaatttggg agagattccg aagtttccgg atgctgtgaa agtgctgttc agcgatgatt 1200
 ccatcagatc cctgaaagtt acatggaatt ttgatccttc tcttgttgaa acaccgggtg 1260
 tctacagagt ggaaggatc ctggaagata tagaccagaa gatcttcgca accttgactg 1320
 tgaagggaag tagaaactac ctgaagaacc ctgggtttga aacgggtgag ttttctccct 1380
 ggaagggtgtt cggtaacgga aaacgcagtg aaggtggtaa aggccgatcc tccgagtaa 1439

<210> 250
 <211> 479
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(33)

<400> 250
 Met Ile Asn Pro Val Lys Asp Leu Arg Glu Asp Phe Ile Phe Gly Met
 1 5 10 15
 Asp Val Ser Met Leu Tyr Glu Ile Glu Arg Leu Gly Gly Lys Phe Phe
 20 25 30
 Asp Gly Gly Val Glu Lys Asp Leu Phe Gln Ile Leu Lys Asp His Glu
 35 40 45
 Ile Asn Trp Ile Arg Leu Arg Val Trp Asn Asp Pro Arg Asp Glu Asn
 50 55 60
 Gly Asn Pro Leu Gly Gly Gly Asn Cys Asp Tyr Leu Lys Met Thr Glu
 65 70 75 80
 Ile Ala Lys Arg Ala Lys Lys Tyr Gly Met Lys Val Leu Leu Asp Phe
 85 90 95
 His Tyr Ser Asp Trp Trp Ala Asp Pro Gly Lys Gln Tyr Lys Pro Lys
 100 105 110
 Glu Trp Asp His Leu His Gly Glu Leu Leu Glu Arg Ala Val Tyr Ser
 115 120 125
 Tyr Thr Lys Leu Val Leu Asn His Met Arg Arg Asn Gly Ala Leu Pro
 130 135 140
 Asp Met Val Gln Val Gly Asn Glu Val Asn Asn Gly Phe Leu Trp Pro
 145 150 155 160
 Asp Gly Met Ile Ala Gly Lys Asp Ala Gly Gly Phe Asp Gly Phe Thr

Met Ala Thr Asp Tyr Trp Gln Tyr Trp Thr Asp Gly Gly Gly Thr Val
 1 5 10 15
 Asn Ala Val Asn Gly Ser Gly Gly Asn Tyr Ser Val Thr Trp Gln Asn
 20 25 30
 Ser Gly Asp Phe Val Val Gly Lys Gly Trp Ser Val Gly Ser Pro Asn
 35 40 45
 Arg Thr Ile Asn Tyr Asn Ala Gly Ile Trp Glu Pro Ser Gly Asn Gly
 50 55 60
 Tyr Leu Thr Leu Tyr Gly Trp Thr Arg Asn Ser Leu Ile Glu Tyr Tyr
 65 70 75 80
 Val Val Asp Ser Trp Gly Thr Tyr Arg Pro Thr Gly Thr His Lys Gly
 85 90 95
 Thr Val Asn Ser Asp Gly Gly Thr Tyr Asp Ile Tyr Thr Thr Met Arg
 100 105 110
 Tyr Asn Ala Pro Ser Ile Asp Gly Thr Gln Thr Phe Gln Gln Phe Trp
 115 120 125
 Ser Val Arg Gln Ser Lys Arg Pro Thr Gly Ser Asn Val Ser Ile Thr
 130 135 140
 Phe Ser Asn His Val Asn Ala Trp Arg Ser Lys Gly Met Asn Leu Gly
 145 150 155 160
 Ser Ser Trp Ser Tyr Gln Val Leu Ala Thr Glu Gly Tyr Gln Ser Ser
 165 170 175
 Gly Arg Ser Asn Val Thr Val Trp
 180

<210> 253
 <211> 1047
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<400> 253
 atgattgtta gcttcaagag cctgaaggca ctcgctgtgcc tcggcgtgct cggcatcacc 60
 gccgcgcacg cgcaaacctg catcacgtcg agccagacgg gcaccaacaa cggcaattac 120
 ttttcgttct ggaaagacag tccggggcacg gtgaacttct gcatgtatgc gaatggccgc 180
 tatacctcca actggagcgg catcaacaac tgggtgggctg gcaagggctg ggctaccggc 240
 tccagccaca cgatcagcta ctccggcacg ttcaattcgc cgggcaacgg ttacctggcc 300
 ctgtatggct ggaccaccaa tccattgggtc gagtactaca tcgtcgacag ctgggggtacc 360
 taccgtccgc cgggcggcca gggtttcatg ggcacggtag ttagcgacgg gggcacgtac 420
 gacgtgtacg ggacgcaacg cgtgaaccag ccatccatca tcggcaacgc cacgttctac 480
 cagtactgga gctgtcggca gtcgaagcgc gtgggcggca ccatcaccat cgccaaccat 540
 ttcaacgcct gggccacgct gggcatgaac ctggggccagc acaactacca ggcatggcc 600
 accgaggggt accagagcag cggcagctcc gacatcaccg tgaccgaagg tggcggcagy 660
 tcctcgctcg cctcgggcgg cggcagcacc agcagcagtg gtggcggcgg caacaagagc 720
 ttcacgggtg gtgcgcgcgg cacggccgga ggcgagaaca tccagctgca ggtgaacaac 780
 cagacggctg cgagctggaa cctcaccacc agcatgcaga actacaccgc ctcgaccagc 840
 ctgagcggcg gcatcaccgt gctctacacc aacgacggcg gcagccgcga cgtgcagggtg 900
 gactacatca tcgtgaacgg ccagaccgc cagtcggaag cgagagcta caacaccggg 960
 ttgtatgcga atggacgctg cggcgggtggc tcgaacagcg agtggatgca ttgcaacggc 1020
 gcgatcggct acggcaatac gccctga 1047

<210> 254
 <211> 347
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(24)

<400> 254
 Met Ile Val Ser Phe Lys Ser Leu Lys Ala Leu Ala Cys Leu Gly Val
 1 5 10 15
 Leu Gly Ile Thr Ala Ala His Ala Gln Thr Cys Ile Thr Ser Ser Gln
 20 25 30

Thr Gly Thr Asn Asn Gly Asn Tyr Phe Ser Phe Trp Lys Asp Ser Pro
 35 40 45
 Gly Thr Val Asn Phe Cys Met Tyr Ala Asn Gly Arg Tyr Thr Ser Asn
 50 55 60
 Trp Ser Gly Ile Asn Asn Trp Val Gly Gly Lys Gly Trp Ala Thr Gly
 65 70 75 80
 Ser Ser His Thr Ile Ser Tyr Ser Gly Thr Phe Asn Ser Pro Gly Asn
 85 90 95
 Gly Tyr Leu Ala Leu Tyr Gly Trp Thr Asn Pro Leu Val Glu Tyr
 100 105 110
 Tyr Ile Val Asp Ser Trp Gly Thr Tyr Arg Pro Pro Gly Gly Gln Gly
 115 120 125
 Phe Met Gly Thr Val Val Ser Asp Gly Gly Thr Tyr Asp Val Tyr Arg
 130 135 140
 Thr Gln Arg Val Asn Gln Pro Ser Ile Ile Gly Asn Ala Thr Phe Tyr
 145 150 155 160
 Gln Tyr Trp Ser Val Arg Gln Ser Lys Arg Val Gly Gly Thr Ile Thr
 165 170 175
 Ile Ala Asn His Phe Asn Ala Trp Ala Thr Leu Gly Met Asn Leu Gly
 180 185 190
 Gln His Asn Tyr Gln Val Met Ala Thr Glu Gly Tyr Gln Ser Ser Gly
 195 200 205
 Ser Ser Asp Ile Thr Val Thr Glu Gly Gly Gly Ser Ser Ser Ser
 210 215 220
 Gly Gly Gly Ser Thr Ser Ser Ser Gly Gly Gly Gly Asn Lys Ser Phe
 225 230 235 240
 Thr Val Arg Ala Arg Gly Thr Ala Gly Gly Glu Asn Ile Gln Leu Gln
 245 250 255
 Val Asn Asn Gln Thr Val Ala Ser Trp Asn Leu Thr Thr Ser Met Gln
 260 265 270
 Asn Tyr Thr Ala Ser Thr Ser Leu Ser Gly Gly Ile Thr Val Leu Tyr
 275 280 285
 Thr Asn Asp Gly Gly Ser Arg Asp Val Gln Val Asp Tyr Ile Ile Val
 290 295 300
 Asn Gly Gln Thr Arg Gln Ser Glu Ala Gln Ser Tyr Asn Thr Gly Leu
 305 310 315 320
 Tyr Ala Asn Gly Arg Cys Gly Gly Gly Ser Asn Ser Glu Trp Met His
 325 330 335
 Cys Asn Gly Ala Ile Gly Tyr Gly Asn Thr Pro
 340 345

<210> 255
 <211> 1137
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample

<400> 255
 ttgatctttt ccgtcagtgg ttccgcgtct cggcggcgcc ctggcatcca caagggggat 60
 tccatgattt tcggtctaaa gtcgatcacg ggcaggcgcg ccgtcgcggc gctggcctgc 120
 cttgccggcc tctacatggc gccggcgcaat gcgcaaacct gcatcacgtc gagccagacg 180
 ggcaccaaca acggcaacta cttttcgttc tggaaagaca gcccgggcac ggtgaacttc 240
 tgcattgtact ccggcgggcg ctacacgtcc aactggagcg gcatcaacaa ctgggtgggc 300
 ggcaagggtt ggcagacggg ctctgccgc accgtctcct actccggcag cttcaattcg 360
 ccgggtaacg gctacctgac gctctacggc tggaccacca atccgctcat cgagtactac 420
 atcgtcgaca actggggcag ctatcgtccg ccgggtggcc agggcttcat gggcacgggtg 480
 aacaccgacg gcggcacgta cgacatctat cgcacgcaac gggtaacca gccgtcgatc 540
 atcggcacccg cgacgttcta ccagtactgg agcgtgcggc agtcgaagcg caccggcgcg 600
 accatcacca cggccaacca cttcaatgcc tgggccagcc tcggcatgaa cctgggacag 660
 cacaactacc aggtgatggc caccgagggc taccagagca gcggcagctc cgacatcacg 720
 gtgtgggaag gcacgagcag cggcggaagc agcaatggcg gcagcagcaa cggcggcagc 780
 agcaatgggt gcagcgggcg cagcaagagc ttacaggtgc gcgcgcgcgg cactgcgggc 840
 ggcgagtcca tcacgtgctg ggtcaacaac cagaacgtgc agacctggac gctgggtacc 900
 agcatgcaga actacacggc ctgcacctcg ctgagcggcg gcatcacggg ggcgttcacc 960
 aacgacggcg gcagccgcga cgtgcagggt gactacatca tcgtgaatgg ccagaccgcg 1020
 cagtccgaac agcagagcta caacactggc cctacgcga atggaagctg tgggtggcgg 1080
 tcgaacagcg agtggatgca ttgcaacggc gccatcggt acggcaatac gccctga 1137

<210> 256
 <211> 378
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample

<221> SIGNAL
 <222> (1)...(51)

<400> 256
 Leu Ile Phe Ser Val Ser Gly Ser Ala Ser Arg Arg Arg Pro Gly Ile
 1 5 10 15
 His Lys Gly Asp Ser Met Ile Phe Gly Leu Lys Ser Ile Thr Gly Arg
 20 25 30
 Arg Ala Val Ala Ala Leu Ala Cys Leu Ala Gly Leu Tyr Met Ala Pro
 35 40 45
 Ala Asn Ala Gln Thr Cys Ile Thr Ser Ser Gln Thr Gly Thr Asn Asn
 50 55 60
 Gly Asn Tyr Phe Ser Phe Trp Lys Asp Ser Pro Gly Thr Val Asn Phe
 65 70 75 80
 Cys Met Tyr Ser Gly Gly Arg Tyr Thr Ser Asn Trp Ser Gly Ile Asn
 85 90 95
 Asn Trp Val Gly Gly Lys Gly Trp Gln Thr Gly Ser Ser Arg Thr Val
 100 105 110
 Ser Tyr Ser Gly Ser Phe Asn Ser Pro Gly Asn Gly Tyr Leu Thr Leu
 115 120 125
 Tyr Gly Trp Thr Thr Asn Pro Leu Ile Glu Tyr Tyr Ile Val Asp Asn
 130 135 140
 Trp Gly Ser Tyr Arg Pro Gly Gly Gln Gly Phe Met Gly Thr Val
 145 150 155 160
 Asn Thr Asp Gly Gly Thr Tyr Asp Ile Tyr Arg Thr Gln Arg Val Asn
 165 170 175
 Gln Pro Ser Ile Ile Gly Thr Ala Thr Phe Tyr Gln Tyr Trp Ser Val
 180 185 190
 Arg Gln Ser Lys Arg Thr Gly Gly Thr Ile Thr Thr Ala Asn His Phe
 195 200 205
 Asn Ala Trp Ala Ser Leu Gly Met Asn Leu Gly Gln His Asn Tyr Gln
 210 215 220
 Val Met Ala Thr Glu Gly Tyr Gln Ser Ser Gly Ser Ser Asp Ile Thr
 225 230 235 240
 Val Trp Glu Gly Thr Ser Ser Gly Gly Ser Ser Asn Gly Gly Ser Ser
 245 250 255
 Asn Gly Gly Ser Ser Asn Gly Gly Ser Gly Gly Thr Lys Ser Phe Thr
 260 265 270
 Val Arg Ala Arg Gly Thr Ala Gly Gly Glu Ser Ile Thr Leu Arg Val
 275 280 285
 Asn Asn Gln Asn Val Gln Thr Trp Thr Leu Gly Thr Ser Met Gln Asn
 290 295 300
 Tyr Thr Ala Ser Thr Ser Leu Ser Gly Gly Ile Thr Val Ala Phe Thr
 305 310 315 320
 Asn Asp Gly Gly Ser Arg Asp Val Gln Val Asp Tyr Ile Ile Val Asn
 325 330 335
 Gly Gln Thr Arg Gln Ser Glu Gln Gln Ser Tyr Asn Thr Gly Leu Tyr
 340 345 350
 Ala Asn Gly Ser Cys Gly Gly Gly Ser Asn Ser Glu Trp Met His Cys
 355 360 365
 Asn Gly Ala Ile Gly Tyr Gly Asn Thr Pro
 370 375

<210> 257
 <211> 2694
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample
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<400> 257

atggctgata	tatctaccac	accagtcaca	gcctcgacag	atgctgccaa	gaacctgtat	60
gcctatttcc	tggaaccagta	tggaagaag	acgattttcca	gcgtcatggc	caatgtcaac	120
tggaacaaca	cttgtgccga	gaaagtctat	aaactcacgg	gcaagtatcc	tgccatgaac	180
tgctacgact	tcattccacat	ctgttttctcg	ccagccaact	ggattgacta	caccgacatc	240
actcctgcc	aggaatggca	cgatgcgggc	ggtatcgtag	agttgatgtg	gcattttcaat	300
gtgcctaaga	gccagggggc	aacagatgtt	acctgcacgc	ccagcgagac	cacctttaag	360
gcttccaatg	ctctgtgttag	cggcacgtgg	gagaacaaat	ggttctacga	gcagatggac	420
aaggtcattg	ccaccattct	caagttacag	gacgctggca	ttgccgctac	ctggcgacct	480
ttccatgagg	cagcaggcaa	tgcttgccgc	aagcagcagg	ccgactggac	caaagcatgg	540
ttctgggtgg	gctacgacgg	tgccgacacc	tacaagaaac	tgtggattgc	catgtacgac	600
tatttcaagc	tgaaaggcgt	gaacaacctc	atctggatgt	ggaccacca	gaattataat	660
ggtgacagca	gcaaatacaa	ccaggacacc	gactggtacc	ctggcgacga	gtatgttgac	720
atcgtggccc	gcgacctcta	tggttacaat	gccgaccaga	acctgcagga	gttcagcgag	780
attcaggctg	cctatcccaa	caagatggtg	gttctgggtg	aatgcggaaa	aggtgatagc	840
ggcgaccccg	gcaagatgtc	cgatgtatgg	gcgaaagggtg	ccaagtgggg	ccacttcatg	900
gtatggtatc	aaggcgaaac	aggctctacc	gacacgatgt	gcagcgacga	ctggtggaag	960
gatgccatga	gcagcgccaa	cgatcatcacc	gcgacaagg	tggttatccc	cgatgtcact	1020
tcaaccatcg	agaatgccac	ggatgccgtg	aagaacatgg	gactgggggtg	gaacctgggg	1080
aacgccctcg	acgccaatgc	ccagcaatac	catgatgcc	cccaggacaa	ctactggggg	1140
cagcaggaca	ttacctctga	gagctgctgg	ggtcagctac	ccaccaaggc	agagctgatg	1200
gccatgatga	aagaagccgg	tttcggagcc	atccgcgttc	ccgtgacatg	gtataaccac	1260
atggacaagg	agggcaatgt	ggatgcagca	tggtatgaatc	gtgtgcatga	ggtggttgac	1320
tatgtcatca	gccagggaat	gtactgcatc	ctcaacgtac	accacgacac	gggtgccgac	1380
agctacgaca	gccagaagaa	cctcaccggc	taccattgga	tcaaggccga	cgaaaccaac	1440
tacgccacca	acaaggcccg	ctatgagaag	ctgtggcagc	agatagccca	ggagttccgc	1500
aactacggcc	agctgtctgt	gttcgagggc	tataacgaga	tgctcgatgc	caacaactcc	1560
tggaattttg	cacagagcag	ttcagcctac	gatgccatca	acaaatacgc	ccagagcttt	1620
gtcgtatgtc	tacgcgccac	cggtggcaac	aatgcccagc	gcaacctcat	tgctcagcaca	1680
tacggcgccct	gctcaggcaa	cggcacgtgg	gatgcaagag	tgcaagacc	cttgaagaaa	1740
ctgcagattc	ccacgggtga	aagcaaccat	atcatcttcg	aggttcaca	ctatccctcc	1800
atcgtcaaca	aggacaacgc	gggcaactac	gtcagcgatc	gcaccatcag	cgaaatcaag	1860
gcagagattg	atgcatggct	taagaactta	aagaccacc	tcgtcagcaa	ggcgctccc	1920
gtcatcatcg	gcgaatgggg	caccaacaac	gtcgtatgcc	gcggtggcaa	gacagactac	1980
gacctccata	aggacctgat	gttcgaattt	gtcagctaca	tgataaagac	catgaagcag	2040
aacgacattg	ccaccttcta	ctggatggga	cttaccgagc	gcgctccacg	cacctacccc	2100
gccttcacac	agcccgacct	ggcgctgaag	atgctgcagg	cctatcacgg	cgactcttgg	2160
aatccctacc	tgcttgacgc	caaggacttt	cccgaaggca	aaatcacctc	ggccacgggtg	2220
aatttcaaca	gccaatgggg	cgaactgacc	atccacgatg	gagctattga	caagaccgtc	2280
tatataggta	tcaagggtga	gctggaagaa	aagcctggca	ctggagccct	gtctttcaag	2340
gtatatggca	acagtgagaa	ggcaacagcc	atcaattcca	aaacccaca	gttggctttc	2400
ttcagttaca	caggcatcca	gaaaatcaac	ctacagtgg	acatagccac	caaggggag	2460
atcaaatca	agagcgtcaa	ccttatcaag	cacgacgact	ccacagaacc	ctgtagtctg	2520
aaagtggctt	ggggttgtac	tctcagcgac	cagaactacg	ccacgggcat	cgaagacatt	2580
actcatctc	ctgttcgtca	tgacgatgga	atcatctaca	atctgagcgg	acagcctgta	2640
acctctctc	agcgcggcat	ctacatctc	aacggaaaga	aaatcatcaa	atag	2694

<210> 258

<211> 897

<212> PRT

<213> Unknown

<220>

<223> obtained from an environmental sample

<400> 258

Met	Ala	Asp	Ile	Ser	Thr	Thr	Pro	Val	Thr	Ala	Ser	Thr	Asp	Ala	Ala
1			5					10					15		
Lys	Asn	Leu	Tyr	Ala	Tyr	Phe	Leu	Asp	Gln	Tyr	Gly	Lys	Lys	Thr	Ile
		20					25					30			
Ser	Ser	Val	Met	Ala	Asn	Val	Asn	Trp	Asn	Asn	Thr	Cys	Ala	Glu	Lys
		35				40					45				
Val	Tyr	Lys	Leu	Thr	Gly	Lys	Tyr	Pro	Ala	Met	Asn	Cys	Tyr	Asp	Phe
	50				55					60					
Ile	His	Ile	Cys	Phe	Ser	Pro	Ala	Asn	Trp	Ile	Asp	Tyr	Thr	Asp	Ile
65				70				75						80	
Thr	Pro	Ala	Lys	Glu	Trp	His	Asp	Ala	Gly	Gly	Ile	Val	Gln	Leu	Met
			85					90					95		

Trp His Phe Asn Val Pro Lys Ser Gln Gly Ala Thr Asp Val Thr Cys
 100 105 110
 Thr Pro Ser Glu Thr Thr Phe Lys Ala Ser Asn Ala Leu Val Ser Gly
 115 120 125
 Thr Trp Glu Asn Lys Trp Phe Tyr Glu Gln Met Asp Lys Val Ile Ala
 130 135 140
 Thr Ile Leu Lys Leu Gln Asp Ala Gly Ile Ala Ala Thr Trp Arg Pro
 145 150 155 160
 Phe His Glu Ala Ala Gly Asn Ala Cys Ala Lys Gln Gln Ala Asp Trp
 165 170 175
 Thr Lys Ala Trp Phe Trp Trp Gly Tyr Asp Gly Ala Asp Thr Tyr Lys
 180 185 190
 Lys Leu Trp Ile Ala Met Tyr Asp Tyr Phe Lys Leu Lys Gly Val Asn
 195 200 205
 Asn Leu Ile Trp Met Trp Thr Thr Gln Asn Tyr Asn Gly Asp Ser Ser
 210 215 220
 Lys Tyr Asn Gln Asp Thr Asp Trp Tyr Pro Gly Asp Glu Tyr Val Asp
 225 230 235 240
 Ile Val Ala Arg Asp Leu Tyr Gly Tyr Asn Ala Asp Gln Asn Leu Gln
 245 250 255
 Glu Phe Ser Glu Ile Gln Ala Ala Tyr Pro Asn Lys Met Val Val Leu
 260 265 270
 Gly Glu Cys Gly Lys Gly Asp Ser Gly Asp Pro Gly Lys Met Ser Asp
 275 280 285
 Val Trp Ala Lys Gly Ala Lys Trp Gly His Phe Met Val Trp Tyr Gln
 290 295 300
 Gly Glu Gln Gly Ser Thr Asp Thr Met Cys Ser Asp Trp Trp Lys
 305 310 315 320
 Asp Ala Met Ser Ser Ala Asn Val Ile Thr Arg Asp Lys Val Val Ile
 325 330 335
 Pro Asp Val Thr Ser Thr Ile Glu Asn Ala Thr Asp Ala Val Lys Asn
 340 345 350
 Met Gly Leu Gly Trp Asn Leu Gly Asn Ala Leu Asp Ala Asn Ala Gln
 355 360 365
 Gln Tyr His Asp Ala Thr Gln Asp Asn Tyr Trp Gly Gln Gln Asp Ile
 370 375 380
 Thr Ser Glu Ser Cys Trp Gly Gln Leu Pro Thr Lys Ala Glu Leu Met
 385 390 395 400
 Ala Met Met Lys Glu Ala Gly Phe Gly Ala Ile Arg Val Pro Val Thr
 405 410 415
 Trp Tyr Asn His Met Asp Lys Asp Gly Asn Val Asp Ala Ala Trp Met
 420 425 430
 Asn Arg Val His Glu Val Val Asp Tyr Val Ile Ser Gln Gly Met Tyr
 435 440 445
 Cys Ile Leu Asn Val His His Asp Thr Gly Ala Asp Ser Tyr Asp Ser
 450 455 460
 Gln Lys Asn Leu Thr Gly Tyr His Trp Ile Lys Ala Asp Glu Thr Asn
 465 470 475 480
 Tyr Ala Thr Asn Lys Ala Arg Tyr Glu Lys Leu Trp Gln Gln Ile Ala
 485 490 495
 Gln Glu Phe Arg Asn Tyr Gly Gln Leu Leu Leu Phe Glu Gly Tyr Asn
 500 505 510
 Glu Met Leu Asp Ala Asn Asn Ser Trp Asn Phe Ala Gln Ser Ser Ser
 515 520 525
 Ala Tyr Asp Ala Ile Asn Lys Tyr Ala Gln Ser Phe Val Asp Val Val
 530 535 540
 Arg Ala Thr Gly Gly Asn Asn Ala Gln Arg Asn Leu Ile Val Ser Thr
 545 550 555 560
 Tyr Gly Ala Cys Ser Gly Asn Gly Thr Trp Asp Ala Arg Val Gln Asp
 565 570 575
 Pro Leu Lys Lys Leu Gln Ile Pro Thr Gly Glu Ser Asn His Ile Ile
 580 585 590
 Phe Glu Val His Asn Tyr Pro Ser Ile Val Asn Lys Asp Asn Ala Gly
 595 600 605
 Asn Tyr Val Ser Asp Arg Thr Ile Ser Glu Ile Lys Ala Glu Ile Asp
 610 615 620
 Ala Trp Leu Lys Asn Leu Lys Thr His Leu Val Ser Lys Gly Ala Pro
 625 630 635 640
 Val Ile Ile Gly Glu Trp Gly Thr Asn Asn Val Asp Ala Gly Gly Gly

645 650 655
 Lys Thr Asp Tyr Asp Leu His Lys Asp Leu Met Phe Glu Phe Val Ser
 660 665 670
 Tyr Met Ile Lys Thr Met Lys Gln Asn Asp Ile Ala Thr Phe Tyr Trp
 675 680 685
 Met Gly Leu Thr Asp Gly Ala Pro Arg Thr Tyr Pro Ala Phe Thr Gln
 690 695 700
 Pro Asp Leu Ala Leu Lys Met Leu Gln Ala Tyr His Gly Asp Ser Trp
 705 710 715 720
 Asn Pro Tyr Leu Pro Asp Ala Lys Asp Phe Pro Glu Gly Lys Ile Thr
 725 730 735
 Ser Ala Thr Val Asn Phe Asn Ser Gln Trp Gly Glu Leu Thr Ile His
 740 745 750
 Asp Gly Ala Ile Asp Lys Thr Val Tyr Arg Gly Ile Lys Val Glu Leu
 755 760 765
 Glu Glu Lys Pro Ala Thr Gly Ala Leu Ser Phe Lys Val Tyr Ala Asn
 770 775 780
 Ser Glu Lys Ala Thr Ala Ile Asn Ser Lys Thr Pro Gln Leu Ala Phe
 785 790 795 800
 Phe Ser Tyr Thr Gly Ile Gln Lys Ile Asn Leu Gln Trp Asn Ile Ala
 805 810 815
 Thr Lys Gly Ser Ile Lys Ile Lys Ser Val Asn Leu Ile Lys His Asp
 820 825 830
 Asp Ser Thr Glu Pro Cys Ser Leu Lys Val Ala Trp Gly Cys Thr Leu
 835 840 845
 Ser Asp Gln Asn Tyr Ala Thr Gly Ile Glu Asp Ile Thr Ile Thr Pro
 850 855 860
 Val Arg His Asp Asp Gly Ile Ile Tyr Asn Leu Ser Gly Gln Pro Val
 865 870 875 880
 Thr Ser Pro Gln Arg Gly Ile Tyr Ile Leu Asn Gly Lys Lys Ile Ile
 885 890 895
 Lys

<210> 259
 <211> 1143
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<400> 259
 atgaagaaaa ttcgcttact ccagggtggt tcgttggcca tgtcaataat gtttcttttg 60
 tcatgtcagg cacaaaaacc agttgactct cttaagggaag ctttgatgg tttgtttctt 120
 ataggtactg ccatgaacac ccctcagatc accggccagg atacacaaac acttgagttg 180
 ataaaaaac acatgaactc catagtggcc gaaaatgtaa tgaaaagtga ggtgcttcaa 240
 cccagggaag gagagtttga ttttactctt gccgatcagt ttgttcaatt tggatcgcgt 300
 aacaatatgc atatatgttg ccataccctt atatggcatt cccaggcgcc acgatgggtt 360
 tttgtggatg agaacggaaa cgatgtgagc cccgaaattc tgaaacaaag aatgaaagac 420
 catatttata ccgtagttag ccgttataaa ggcaaaattc atggatggga tgtggtgaat 480
 gagtgtataa atgacgatgg ttcgtggcgc aatagtaagt ttaccaaat tcttggtgaa 540
 gattttgtta aatatgcatt ccagtttgca gctgaagccg atcccgatgc agagctttat 600
 tacaatgatt attcgaatgt ccttcaggga cgtagggaag gcgtaattaa gatggtgaga 660
 aatctgcagg aacagggaat taaaattgat ggtattggga tgcagggcca cctgatgatt 720
 gattatccac ccctcgaaga ttttgaaacg agtatactgg cttttgccga tctgggggtg 780
 aatgtcatga taaccgaact cgatatatcc gttttgccat ttcctaccgc caacgtgggc 840
 gccgatgttt ctctgaacat tgcatacaat actgaattaa atccctaccc gaatggctta 900
 cccgaagatg tagcgcagaa attacataat cgggtgggtg atctttttcg cctgttcatt 960
 aaacaccacg ataaaattac ccgtgttaac acttggggtg cagccgatgc catgtcatgg 1020
 aagaataact ggcccattcg tggaccgtaca gattatccct tacttttcga tcgcgatttt 1080
 cagcccaaac cctttgtcgc tgatataatt aaggaggcat tggcagccaa aagaaaatta 1140
 taa 1143

<210> 260
 <211> 380
 <212> PRT
 <213> Unknown

<220>
<223> obtained from an environmental sample.

<221> SIGNAL
<222> (1)...(24)

<400> 260
Met Lys Lys Ile Arg Leu Leu Gln Gly Val Ser Leu Ala Met Ser Ile
1 5 10 15
Met Phe Leu Leu Ser Cys Gln Ala Gln Lys Pro Val Asp Ser Leu Lys
20 25 30
Glu Ala Phe Asp Gly Leu Phe Leu Ile Gly Thr Ala Met Asn Thr Pro
35 40 45
Gln Ile Thr Gly Gln Asp Thr Gln Thr Leu Glu Leu Ile Lys Lys His
50 55 60
Met Asn Ser Ile Val Ala Glu Asn Val Met Lys Ser Glu Val Leu Gln
65 70 75 80
Pro Arg Glu Gly Glu Phe Asp Phe Thr Leu Ala Asp Gln Phe Val Gln
85 90 95
Phe Gly Ile Asp Asn Asn Met His Ile Val Gly His Thr Leu Ile Trp
100 105 110
His Ser Gln Ala Pro Arg Trp Phe Phe Val Asp Glu Asn Gly Asn Asp
115 120 125
Val Ser Pro Glu Ile Leu Lys Gln Arg Met Lys Asp His Ile Tyr Thr
130 135 140
Val Val Gly Arg Tyr Lys Gly Lys Ile His Gly Trp Asp Val Val Asn
145 150 155 160
Glu Cys Ile Asn Asp Gly Ser Trp Arg Asn Ser Lys Phe Tyr Gln
165 170 175
Ile Leu Gly Glu Asp Phe Val Lys Tyr Ala Phe Gln Phe Ala Ala Glu
180 185 190
Ala Asp Pro Asp Ala Glu Leu Tyr Tyr Asn Asp Tyr Ser Met Phe Leu
195 200 205
Pro Gly Arg Arg Glu Gly Val Ile Lys Met Val Arg Asn Leu Gln Glu
210 215 220
Gln Gly Ile Lys Ile Asp Gly Ile Gly Met Gln Gly His Leu Met Ile
225 230 235 240
Asp Tyr Pro Pro Leu Glu Asp Phe Glu Thr Ser Ile Leu Ala Phe Ala
245 250 255
Asp Leu Gly Val Asn Val Met Ile Thr Glu Leu Asp Ile Ser Val Leu
260 265 270
Pro Phe Pro Thr Arg Asn Val Gly Ala Asp Val Ser Leu Asn Ile Ala
275 280 285
Tyr Asn Thr Glu Leu Asn Pro Tyr Pro Asn Gly Leu Pro Glu Asp Val
290 295 300
Ala Gln Lys Leu His Asn Arg Trp Val Asp Leu Phe Arg Leu Phe Ile
305 310 315 320
Lys His His Asp Lys Ile Thr Arg Val Thr Thr Trp Gly Thr Ala Asp
325 330 335
Ala Met Ser Trp Lys Asn Asn Trp Pro Ile Arg Gly Arg Thr Asp Tyr
340 345 350
Pro Leu Leu Phe Asp Arg Asp Phe Gln Pro Lys Pro Phe Val Ala Asp
355 360 365
Ile Ile Lys Glu Ala Leu Ala Lys Arg Lys Leu
370 375 380

<210> 261
<211> 1629
<212> DNA
<213> Unknown

<220>
<223> obtained from an environmental sample.

<400> 261
atgataaaca aaattggcaa aggttttttt tctgcgttca tttgtgctgc tgcgttgagt 60
gtctccacag ttaatgctca gcaaactgtc accaccaaca cgcaaggcac gcacgatggt 120
tttttctatt cgttttggaa agacagtggg gatgcatcat ttggtttgcg tgagggaggg 180
cgttacacct cgcaatggaa tacttctacc aataactggg tgggtggaaa aggggtggaat 240

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cccgggtggtga gaaggggttgt tcactatcaa ggccaatata atgttgataa ttcacaaaac 300
tcttattttgg cattgtatgg ctggacacgc tcaccactga ttgaatatta cgtgattgaa 360
agttacggct cgtataaccc gtcgaattgc acccaaggctc ggcagacctta tggcaccttt 420
cagagtgatg gtgcaacctt tgaaattgtt cgctgtcagc gagttcagca gccctctatc 480
gatggcacac aaacttttcta tcaatacttc agtgtgcgct agccgaagaa aggcctttggt 540
agtatcagtg gtacgatcac tgtggggcaac cattttgatg catggggccgc cgccgggtttg 600
aacctggggg aacatgatta tatggtgatg gctaccgagg gttatcagag caccggtagt 660
tcggatatta cggtcagtgga aattaccggg ggttcagggtg gtggctcttc ctcggggtgct 720
aataccctgg tgattcgtgc tgtgggcacc tctggtaatg aattgctgcg tgtcaatgtg 780
ggtaggtagcc ctgtgcagac attgagcctt tcgaccagtt ggcaggattt tactgtcaat 840
acggatgcaa cgggtgacat taacgtagag ttgtttaatg atcagggtca gggttatgag 900
gcgcgtatcg attatgtgct ggtaaatggt gagaccgct acgcggccga tcagagttat 960
aacaccagtg cctggggcagg cgaatgtggg ggtggctctt ttaccagtg gatgcattgt 1020
gatggcatga ttggcttttg tgatatgacc ggcggaatg ccggtggtgg cggttcttcg 1080
ggtaggttcg gcgccaatac tctggtggtg cgtgctgtcg gcacttcagg taacgagcag 1140
ttgcgcgtga atgtgggcgg caacacgatt caaacactga acctgtcaag cagttggcaa 1200
gattttactg tcaataccga tgcctcgggc gatattaacg tagagctgtt taatgaccag 1260
ggtcagggct atgaggcgcg tattgattat gtgctggtta atggcgagac ccgctacgag 1320
gctgaccaga gttataacac cagcgctgg gatggcgaat gcgggggtgg ctcttttacc 1380
caatggatgc attgtgatgg catgattggt ttggtgata tgtcgggtgg tggttctgct 1440
gtgggtacaa gcagtagcgg taatgccggc agcaatacca gcagtgcctg ttactgtaat 1500
tggtagtgca gtgtgatggc ttcttgtgaa aatcagggtga acggtctggg ttgggaaaat 1560
aatcaaaagc gtattggtaa taatacctgt aataatcagg gcggtagcgg aggcgtggtg 1620
tgcaatttaa

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<210> 262

<211> 542

<212> PRT

<213> Unknown

<220>

<223> obtained from an environmental sample.

<221> SIGNAL

<222> (1)...(26)

<400> 262

```

Met Ile Asn Lys Ile Gly Lys Gly Phe Phe Ser Ala Phe Ile Cys Ala
1      5      10      15
Ala Ala Leu Ser Val Ser Thr Val Asn Ala Gln Gln Thr Val Thr Thr
20      25      30
Asn Thr Gln Gly Thr His Asp Gly Phe Phe Tyr Ser Phe Trp Lys Asp
35      40      45
Ser Gly Asp Ala Ser Phe Gly Leu Arg Glu Gly Gly Arg Tyr Thr Ser
50      55      60
Gln Trp Asn Thr Ser Thr Asn Asn Trp Val Gly Lys Gly Trp Asn
65      70      75      80
Pro Gly Gly Arg Arg Val Val His Tyr Gln Gly Gln Tyr Asn Val Asp
85      90      95
Asn Ser Gln Asn Ser Tyr Leu Ala Leu Tyr Gly Trp Thr Arg Ser Pro
100     105     110
Leu Ile Glu Tyr Tyr Val Ile Glu Ser Tyr Gly Ser Tyr Asn Pro Ser
115     120     125
Asn Cys Thr Gln Gly Arg Gln Thr Tyr Gly Thr Phe Gln Ser Asp Gly
130     135     140
Ala Thr Tyr Glu Ile Val Arg Cys Gln Arg Val Gln Gln Pro Ser Ile
145     150     155     160
Asp Gly Thr Gln Thr Phe Tyr Gln Tyr Phe Ser Val Arg Gln Pro Lys
165     170     175
Lys Gly Phe Gly Ser Ile Ser Gly Thr Ile Thr Val Gly Asn His Phe
180     185     190
Asp Ala Trp Ala Ala Ala Gly Leu Asn Leu Gly Glu His Asp Tyr Met
195     200     205
Val Met Ala Thr Glu Gly Tyr Gln Ser Thr Gly Ser Ser Asp Ile Thr
210     215     220
Val Ser Glu Ile Thr Gly Gly Ser Gly Gly Gly Ser Ser Ser Gly Ala
225     230     235     240
Asn Thr Leu Val Ile Arg Ala Val Gly Thr Ser Gly Asn Glu Leu Leu
245     250     255

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Arg Val Asn Val Gly Gly Ser Pro Val Gln Thr Leu Ser Leu Ser Thr
 Ser Trp Gln Asp Phe Thr Val Asn Thr Asp Ala Thr Gly Asp Ile Asn
 Val Glu Leu Phe Asn Asp Gln Gly Gln Gly Tyr Glu Ala Arg Ile Asp
 Tyr Val Leu Val Asn Gly Glu Thr Arg Tyr Ala Ala Asp Gln Ser Tyr
 Asn Thr Ser Ala Trp Asp Gly Glu Cys Gly Gly Ser Phe Thr Gln
 Trp Met His Cys Asp Gly Met Ile Gly Phe Gly Asp Met Thr Gly Gly
 Asn Ala Gly Gly Gly Ser Ser Gly Gly Ser Gly Ala Asn Thr Leu
 Val Val Arg Ala Val Gly Thr Ser Gly Asn Glu Gln Leu Arg Val Asn
 Val Gly Gly Asn Thr Ile Gln Thr Leu Asn Leu Ser Ser Ser Trp Gln
 Asp Phe Thr Val Asn Thr Asp Ala Ser Gly Asp Ile Asn Val Glu Leu
 Phe Asn Asp Gln Gly Gln Gly Tyr Glu Ala Arg Ile Asp Tyr Val Leu
 Val Asn Gly Glu Thr Arg Tyr Ala Ala Asp Gln Ser Tyr Asn Thr Ser
 Ala Trp Asp Gly Glu Cys Gly Gly Gly Ser Phe Thr Gln Trp Met His
 Cys Asp Gly Met Ile Gly Phe Gly Asp Met Ser Gly Gly Gly Ser Ala
 Val Gly Thr Ser Ser Ser Gly Asn Ala Gly Ser Asn Thr Ser Ser Ala
 Cys Tyr Cys Asn Trp Tyr Gly Ser Val Met Ala Ser Cys Glu Asn Gln
 Val Asn Gly Trp Gly Trp Glu Asn Asn Gln Ser Cys Ile Gly Asn Asn
 Thr Cys Asn Asn Gln Gly Gly Ser Gly Gly Val Val Cys Asn

<210> 263

<211> 1092

<212> DNA

<213> Unknown

<220>

<223> obtained from an environmental sample.

<400> 263

atgaaaacta	atcacccatt	taaattcggg	aaaaaaatat	gtatggcatt	ggctttgctg	60
gtgcttgga	tacaggcttc	aatcgacacag	gaaatttgta	ttaccagcgg	cactgaccag	120
atcagagaaa	ccacatccaa	cggctataacc	cacgaactat	ggaatcagga	caccgggggg	180
acggcctgta	tgactattaa	tgaggcacc	acttacagt	cgcggtggaa	cgggtgcattt	240
aactatttgg	cccgcctggg	attggcctac	gatggttcgt	ccctcaccca	tgctgaccgg	300
gggaaaattca	ccataaatta	tgccctctaac	tacaactgca	acaatatgaa	tgggctctct	360
tatttaagcg	tgtacggatg	gacgcgggat	tttgccaagg	aaaatgccaa	tccggcagga	420
tcacaggctc	atcaggaagc	gctgggtggaa	tattacattg	ttgaaaactg	gtgcgactgg	480
aatgtttcac	aagaccctaa	cgcccagagt	ctgggcaccc	tgaatgttga	tgggtcgatc	540
tatgatatgt	atcgacacaga	acggatcaac	caaccttcta	tcagggtgcg	tggtagctgc	600
gataattttt	accaataactt	cagcattcgc	cgcaacacac	gtaacagtgg	caccattgat	660
gtcagcgctc	atttcaacca	gtgggaagca	ttaaccggcg	tccttatggg	tggcctgcac	720
gaagtgtatga	tgaaggtcga	aggctacaac	tcaaacaatc	aatccagtgg	caatgtaagc	780
tttactcaat	tgctcatg	tgcccgttc	gaggatggcg	ccattgtcga	gaaccagaat	840
gcggtcggcc	atgcgcacgg	tggagaagcg	gtgggagatg	atcaccgccg	tcttgccctg	900
ggccaggccc	ttgaagcggg	cgaacacctc	ggcctcggcc	ttggcgtcga	gggcggcggt	960
gggttcgctg	agaatgatca	actcggcgctc	gcgcatatag	gcgcgggcga	tggctacctt	1020
ctgccactcg	ccgcccagaga	ggtcgcggcc	ctgcttgaaa	aggcgcccca	attgctccag	1080
agaaacgggt	ga					1092

<210> 264

<211> 363

<212> PRT

<213> Unknown

<220>

<223> obtained from an environmental sample.

<221> SIGNAL

<222> (1)...(29)

<400> 264

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Met Lys Thr Asn His Pro Phe Lys Phe Gly Lys Lys Ile Cys Met Ala
 1      5      10      15
Leu Ala Leu Leu Val Leu Gly Ile Gln Ala Ser Ile Ala Gln Glu Ile
 20      25      30
Cys Ile Thr Ser Gly Thr Asp Gln Ile Arg Glu Thr Thr Ser Asn Gly
 35      40      45
Tyr Thr His Glu Leu Trp Asn Gln Asp Thr Arg Gly Thr Ala Cys Met
 50      55      60
Thr Ile Asn Ala Gly Thr Thr Tyr Ser Ala Arg Trp Asn Gly Ala Phe
 65      70      75      80
Asn Tyr Leu Ala Arg Arg Gly Leu Ala Tyr Asp Gly Ser Ser Leu Thr
 85      90      95
His Ala Asp Arg Gly Lys Phe Thr Ile Asn Tyr Ala Ser Asn Tyr Asn
100      105      110
Cys Asn Asn Met Asn Gly Leu Ser Tyr Leu Ser Val Tyr Gly Trp Thr
115      120      125
Arg Asp Phe Ala Lys Glu Asn Ala Asn Pro Ala Gly Ser Gln Ala His
130      135      140
Gln Glu Ala Leu Val Glu Tyr Tyr Ile Val Glu Asn Trp Cys Asp Trp
145      150      155      160
Asn Val Ser Gln Asp Pro Asn Ala Gln Ser Leu Gly Thr Leu Asn Val
165      170      175
Asp Gly Ser Ile Tyr Asp Met Tyr Arg Thr Glu Arg Ile Asn Gln Pro
180      185      190
Ser Ile Arg Cys Gly Gly Thr Cys Asp Asn Phe Tyr Gln Tyr Phe Ser
195      200      205
Ile Arg Arg Asn Thr Arg Asn Ser Gly Thr Ile Asp Val Ser Ala His
210      215      220
Phe Asn Gln Trp Glu Ala Leu Thr Gly Val Pro Met Gly Gly Leu His
225      230      235      240
Glu Val Met Met Lys Val Glu Gly Tyr Asn Ser Asn Asn Gln Ser Ser
245      250      255
Gly Asn Val Ser Phe Thr Gln Leu Leu Met Arg Ala Arg phe Glu Asp
260      265      270
Gly Ala Ile Val Glu Asn Gln Asn Ala Val Gly His Ala His Gly Gly
275      280      285
Glu Ala Val Gly Asp Asp His Arg Arg Leu Ala Leu Gly Gln Ala Leu
290      295      300
Glu Ala Gly Glu His Leu Gly Leu Gly Leu Gly Val Glu Gly Gly Gly
305      310      315      320
Gly Phe Val Glu Asn Asp Gln Leu Gly Val Ala His Ile Gly Ala Gly
325      330      335
Asp Gly Tyr Leu Leu Pro Leu Ala Ala Arg Glu Val Ala Ala Leu Leu
340      345      350
Glu Lys Ala Pro Gln Leu Leu Gln Arg Asn Gly
355      360

```

<210> 265

<211> 996

<212> DNA

<213> Unknown

<220>

<223> obtained from an environmental sample.

<400> 265

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atgaacagct ccctcccctc cctccgcgat gtattcgcga atgatttccg catcggggcg      60
gcggtcaatc ctgtgacgat cgagatgcaa aaacagttgt tgatcgatca tgtcaacagt      120
attacggcag agaaccatat gaagtttgag catcttcagc cggaagaagg gaaatttacc      180
tttcaggaag cggatcggat tgtggatttt gcttgttcgc accgaatggc gggttcgaggg      240

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cacacacttg	tatgggcacaa	ccagactccg	gattgggtgt	ttcaagatgg	tcaaggccat	300
ttcgtcagtc	gggatgtgtt	gcttgagcgg	atgaaatgtc	acatttcaac	tgttgtacgg	360
cgatacaagg	gaaaaatata	ttgttgggat	gtcatcaacg	aagcggtagc	cgacgaagga	420
gacgaattgt	tgaggccgtc	gaagtggcga	caaatcatcg	gggacgattt	tatggaacaa	480
gcattttctt	acgcittatga	agctgaccga	gatgcactgc	ttttttacaa	tgactataat	540
gaatgttttc	cggaaaagag	agaaaaaatt	tttgactttg	tcaaatacgt	gcgtgataaa	600
ggcattccga	ttcatggcat	cggcatgcag	gcgcactgga	gcctgaccgg	cccgtcgcct	660
gatgaaattc	gtgcggcgat	tgaacgggat	gcgtcccttg	gtgttggtct	tcatattacg	720
gaactcgatg	tatccatgtt	tgaatttcac	gatcgtcgaa	ccgatttggc	tgtccccgacg	780
aacgaaatga	tcgaacagca	agcagaacgg	tatgggcaaa	tttttgcttt	gtttaaggag	840
tatcgcgatg	ttattcaaag	tgtcacattt	tgggggaattg	ctgatgacca	tacatggctc	900
gataactttc	cagtgcacgg	gagaaaaaac	tggccgcttt	tgttcgatga	acagcataaa	960
ccgaaaccag	ctttttggcg	ggcagtgagt	gtctga			996

<210> 266

<211> 331

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 266

Met	Asn	Ser	Ser	Leu	Pro	Ser	Leu	Arg	Asp	Val	Phe	Ala	Asn	Asp	Phe
1				5					10					15	
Arg	Ile	Gly	Ala	Ala	Val	Asn	Pro	Val	Thr	Ile	Glu	Met	Gln	Lys	Gln
			20					25					30		
Leu	Leu	Ile	Asp	His	Val	Asn	Ser	Ile	Thr	Ala	Glu	Asn	His	Met	Lys
		35				40						45			
Phe	Glu	His	Leu	Gln	Pro	Glu	Glu	Gly	Lys	Phe	Thr	Phe	Gln	Glu	Ala
	50					55				60					
Asp	Arg	Ile	Val	Asp	Phe	Ala	Cys	Ser	His	Arg	Met	Ala	Val	Arg	Gly
65					70				75					80	
His	Thr	Leu	Val	Trp	His	Asn	Gln	Thr	Pro	Asp	Trp	Val	Phe	Gln	Asp
			85					90					95		
Gly	Gln	Gly	His	Phe	Val	Ser	Arg	Asp	Val	Leu	Leu	Glu	Arg	Met	Lys
			100					105					110		
Cys	His	Ile	Ser	Thr	Val	Val	Arg	Arg	Tyr	Lys	Gly	Lys	Ile	Tyr	Cys
		115				120						125			
Trp	Asp	Val	Ile	Asn	Glu	Ala	Val	Ala	Asp	Glu	Gly	Asp	Glu	Leu	Leu
	130					135					140				
Arg	Pro	Ser	Lys	Trp	Arg	Gln	Ile	Ile	Gly	Asp	Asp	Phe	Met	Glu	Gln
145					150				155					160	
Ala	Phe	Leu	Tyr	Ala	Tyr	Glu	Ala	Asp	Pro	Asp	Ala	Leu	Leu	Phe	Tyr
			165					170						175	
Asn	Asp	Tyr	Asn	Glu	Cys	Phe	Pro	Glu	Lys	Arg	Glu	Lys	Ile	Phe	Ala
			180					185					190		
Leu	Val	Lys	Ser	Leu	Arg	Asp	Lys	Gly	Ile	Pro	Ile	His	Gly	Ile	Gly
		195				200						205			
Met	Gln	Ala	His	Trp	Ser	Leu	Thr	Arg	Pro	Ser	Leu	Asp	Glu	Ile	Arg
	210					215					220				
Ala	Ala	Ile	Glu	Arg	Tyr	Ala	Ser	Leu	Gly	Val	Val	Leu	His	Ile	Thr
225					230				235					240	
Glu	Leu	Asp	Val	Ser	Met	Phe	Glu	Phe	His	Asp	Arg	Arg	Thr	Asp	Leu
			245					250						255	
Ala	Val	Pro	Thr	Asn	Glu	Met	Ile	Glu	Gln	Gln	Ala	Glu	Arg	Tyr	Gly
			260					265					270		
Gln	Ile	Phe	Ala	Leu	Phe	Lys	Glu	Tyr	Arg	Asp	Val	Ile	Gln	Ser	Val
		275				280						285			
Thr	Phe	Trp	Gly	Ile	Ala	Asp	His	Thr	Trp	Leu	Asp	Asn	Phe	Pro	
	290				295					300					
Val	His	Gly	Arg	Lys	Asn	Trp	Pro	Leu	Leu	Phe	Asp	Glu	Gln	His	Lys
305					310					315				320	
Pro	Lys	Pro	Ala	Phe	Trp	Arg	Ala	Val	Ser	Val					
			325					330							

<210> 267

<211> 1956

<212> DNA

<213> Bacteria

<400> 267

atgaagcgta	aggttaagaa	gatggcagct	atggcaacga	gtataattat	ggctatcatg	60
atcatcctac	atagtataacc	agtactcgcc	gggcgaataa	tttacgacaa	tgagacaggc	120
acacatggag	gctacgacta	tgagctctgg	aaagactacg	gaaatacgat	tatggaactt	180
aacgacgggtg	gtacttttag	ttgtcaatgg	agtaatatcg	gtaatgcact	atthagaaaa	240
gggagaaaaat	ttaattccga	caaaacctat	caagaattag	gagatatagt	agttgaatat	300
ggctgtgatt	acaatccaaa	cggaaattcc	tattttgtgtg	tttacgggtg	gacaagaaat	360
ccactgggtg	aatattacat	tgtagaaagc	tggggcagct	ggcgtccacc	tgagcaaca	420
cccaaaggaa	ccatcacagt	ggatggcggt	acttatgaaa	tatatgaaac	taccgggta	480
aatcagcctt	ccatcgatgg	aactgcgaca	ttccaacaat	attggagtgt	tcgtacatcc	540
aagagaacaa	gcggaacaat	atctgtcact	gaacatttta	aacagtggga	agaatgggc	600
atgcgaatgg	gtaagatgta	tgaagttgct	cttaccggtg	aaggttatca	gagcagtggg	660
tacgctaag	tatataagaa	tgaatcaga	ataggtgcaa	atccaaactcc	tgccccatct	720
caaagcccaa	ttagaagaga	tgcattttca	ataatcgaag	cggagaagaa	taacagcaca	780
aattcctcca	ctttacaagt	gattggaacg	ccaaataatg	gcagaggaat	tggttatatt	840
gaaaatggta	ataccgtaac	ttacagcaat	atagattttg	gtagtgggtg	aacagggttc	900
tctgcaactg	ttgcaacgga	ggttaatacc	tcaattcaaa	tccgttctga	cagtcctatc	960
ggaactctac	ttggtacctt	atatgtgaagt	tctaccggga	gctggaatac	atatcaaacc	1020
gtatctacaa	acatcagcaa	aattaccggc	gttcatgata	ttgtattggg	attctcaggt	1080
ccagtcaatg	tggaacaactt	catattttagc	agaagttcac	cagtgcctgc	acctgggtgat	1140
aacacaagag	acgcatattc	tatcatttcag	gccgaggatt	atgacagcag	ttatggcccc	1200
aaccttcaaa	tcttttagctt	accaggcggt	ggcagcgcca	ttggctatat	tgaaaatggg	1260
tattccacta	cctataataa	cgttaatttc	ggcaacggct	taagtcttat	aacagcaaga	1320
gttgccactc	agatctcaac	ttccatttcag	gtgagagcag	gaggagcaac	cggtacttta	1380
cttggtacaa	tatatgttcc	ttcgacaaaat	agttgggatt	cttatcagaa	tgtaactgcc	1440
aaccttagca	atattacagg	tgtgcatgat	attacccttg	tcttttcagg	accagtgaat	1500
gtggactact	tcgtattttac	accagcaaat	gtaaatccag	ggcctacctc	ccctgtcgga	1560
ggtacaagaa	gtgcattttc	caatatttcaa	gccgaagatt	atgacagcag	ttatgggtccc	1620
aaccttcaaa	tcttttagctt	accagggtggt	ggcagcgcca	ttggctatat	tgaaaatggg	1680
tattccacta	cctataaaaa	tattgatttt	ggtgacggcg	caacgtccgt	aacagcaaga	1740
gtagctaccc	agaatgctac	taccatttcag	gtaagattgg	gaagtccatc	gggtacatta	1800
cttggaacaa	tttacgtggg	gtccacagga	agctttgata	cttataggga	tgtatccgct	1860
accattagta	atactgcggg	tgtaaaagat	attgttcttg	tatttttcagg	tcctgttaat	1920
gttgactgggt	ttgtattctc	aaaatcagga	acttaa			1956

<210> 268

<211> 651

<212> PRT

<213> Bacteria

<220>

<221> SIGNAL

<222> (1)...(30)

<400> 268

Met	Lys	Arg	Lys	Val	Lys	Lys	Met	Ala	Ala	Met	Ala	Thr	Ser	Ile	Ile
1				5				10						15	
Met	Ala	Ile	Met	Ile	Ile	Leu	His	Ser	Ile	Pro	Val	Leu	Ala	Gly	Arg
			20					25					30		
Ile	Ile	Tyr	Asp	Asn	Glu	Thr	Gly	Thr	His	Gly	Gly	Tyr	Asp	Tyr	Glu
		35					40					45			
Leu	Trp	Lys	Asp	Tyr	Gly	Asn	Thr	Ile	Met	Glu	Leu	Asn	Asp	Gly	Gly
	50					55					60				
Thr	Phe	Ser	Cys	Gln	Trp	Ser	Asn	Ile	Gly	Asn	Ala	Leu	Phe	Arg	Lys
65					70				75					80	
Gly	Arg	Lys	Phe	Asn	Ser	Asp	Lys	Thr	Tyr	Gln	Glu	Leu	Gly	Asp	Ile
			85					90					95		
Val	Val	Glu	Tyr	Gly	Cys	Asp	Tyr	Asn	Pro	Asn	Gly	Asn	Ser	Tyr	Leu
			100					105					110		
Cys	Val	Tyr	Gly	Trp	Thr	Arg	Asn	Pro	Leu	Val	Glu	Tyr	Tyr	Ile	Val
		115					120					125			
Glu	Ser	Trp	Gly	Ser	Trp	Arg	Pro	Pro	Gly	Ala	Thr	Pro	Lys	Gly	Thr
		130				135					140				
Ile	Thr	Val	Asp	Gly	Gly	Thr	Tyr	Glu	Ile	Tyr	Glu	Thr	Thr	Arg	Val
145					150				155					160	
Asn	Gln	Pro	Ser	Ile	Asp	Gly	Thr	Ala	Thr	Phe	Gln	Gln	Tyr	Trp	Ser
			165					170					175		

Val Arg Thr Ser Lys Arg Thr Ser Gly Thr Ile Ser Val Thr Glu His
 180 185 190
 Phe Lys Gln Trp Glu Arg Met Gly Met Arg Met Gly Lys Met Tyr Glu
 195 200 205
 Val Ala Leu Thr Val Glu Gly Tyr Gln Ser Ser Gly Tyr Ala Asn Val
 210 215 220
 Tyr Lys Asn Glu Ile Arg Ile Gly Ala Asn Pro Thr Pro Ala Pro Ser
 225 230 235 240
 Gln Ser Pro Ile Arg Asp Ala Phe Ser Ile Ile Glu Ala Glu Glu
 245 250 255
 Tyr Asn Ser Thr Asn Ser Ser Thr Leu Gln Val Ile Gly Thr Pro Asn
 260 265 270
 Asn Gly Arg Gly Ile Gly Tyr Ile Glu Asn Gly Asn Thr Val Thr Tyr
 275 280 285
 Ser Asn Ile Asp Phe Gly Ser Gly Ala Thr Gly Phe Ser Ala Thr Val
 290 295 300
 Ala Thr Glu Val Asn Thr Ser Ile Gln Ile Arg Ser Asp Ser Pro Ile
 305 310 315 320
 Gly Thr Leu Leu Gly Thr Leu Tyr Val Ser Thr Gly Ser Trp Asn
 325 330 335
 Thr Tyr Gln Thr Val Ser Thr Asn Ile Ser Lys Ile Thr Gly Val His
 340 345 350
 Asp Ile Val Leu Val Phe Ser Gly Pro Val Asn Val Asp Asn Phe Ile
 355 360 365
 Phe Ser Arg Ser Ser Pro Val Pro Ala Pro Gly Asp Asn Thr Arg Asp
 370 375 380
 Ala Tyr Ser Ile Ile Gln Ala Glu Asp Tyr Asp Ser Ser Tyr Gly Pro
 385 390 395 400
 Asn Leu Gln Ile Phe Ser Leu Pro Gly Gly Gly Ser Ala Ile Gly Tyr
 405 410 415
 Ile Glu Asn Gly Tyr Ser Thr Thr Tyr Asn Asn Val Asn Phe Ala Asn
 420 425 430
 Gly Leu Ser Ser Ile Thr Ala Arg Val Ala Thr Gln Ile Ser Thr Ser
 435 440 445
 Ile Gln Val Arg Ala Gly Gly Ala Thr Gly Thr Leu Leu Gly Thr Ile
 450 455 460
 Tyr Val Pro Ser Thr Asn Ser Trp Asp Ser Tyr Gln Asn Val Thr Ala
 465 470 475 480
 Asn Leu Ser Asn Ile Thr Gly Val His Asp Ile Thr Leu Val Phe Ser
 485 490 495
 Gly Pro Val Asn Val Asp Tyr Phe Val Phe Thr Pro Ala Asn Val Asn
 500 505 510
 Ser Gly Pro Thr Ser Pro Val Gly Gly Thr Arg Ser Ala Phe Ser Asn
 515 520 525
 Ile Gln Ala Glu Asp Tyr Asp Ser Ser Tyr Gly Pro Asn Leu Gln Ile
 530 535 540
 Phe Ser Leu Pro Gly Gly Gly Ser Ala Ile Gly Tyr Ile Glu Asn Gly
 545 550 555 560
 Tyr Ser Thr Thr Tyr Lys Asn Ile Asp Phe Gly Asp Gly Ala Thr Ser
 565 570 575
 Val Thr Ala Arg Val Ala Thr Gln Asn Ala Thr Thr Ile Gln Val Arg
 580 585 590
 Leu Gly Ser Pro Ser Gly Thr Leu Leu Gly Thr Ile Tyr Val Gly Ser
 595 600 605
 Thr Gly Ser Phe Asp Thr Tyr Arg Asp Val Ser Ala Thr Ile Ser Asn
 610 615 620
 Thr Ala Gly Val Lys Asp Ile Val Leu Val Phe Ser Gly Pro Val Asn
 625 630 635 640
 Val Asp Trp Phe Val Phe Ser Lys Ser Gly Thr
 645 650

<210> 269
 <211> 1110
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<400> 269

atggggtaca	ataggatcat	acaagcgatc	cgcgtaagca	agggagatgt	tttgggcgtt	60
cataaagttt	tttacgctgc	acttgcggtg	gtggcgatgg	gggtattcga	aacgtgggca	120
cagtgcgcga	cctggaccgg	aagcaccatt	cgcaattgcg	agggcatcga	ctacgagttg	180
tggaaccaga	acaaccgcgg	cacggtcaac	atggaaatca	cgggaaacgg	aacgttcgcg	240
gcgacgtgga	gcggaacgga	aaacatcctg	tttcgcgccg	gcaagaaatg	ggggttcaac	300
agcaccacga	cggcgcggtc	ggtcggcgcc	atcacgctcg	atttcgctgc	gacctggacc	360
tccagcgaca	acgtgaaaat	gctcggcatc	tacggctggg	cgtattaccc	gtcgggaagc	420
gagccgacga	aaacggaaag	cggtcaaaac	acgagctttt	ccgatcagat	cgagtattac	480
atcatccagg	accgcggagg	cttcaaccgg	ggttccggcg	gcgtcaacgc	caaaaagtac	540
ggcgaggcga	tgatcgacgg	aatcgcctat	gacttttggg	tgcccgaccg	gatcaaccag	600
cccattgctga	caggaagagg	caacttcaag	caatacttca	gcgttccacg	gaacacgagc	660
agccaccggc	aaagcggcat	cgtcagcatt	tcgaagcact	ttgaggagtg	ggacaaggcc	720
ggcatgaaga	tgctggactg	tccgctatac	gaagtcgcga	tgaagggtga	atcgtatacg	780
ggctcggcga	atggcggcgg	gtcggcgga	gtgaccgga	atattctcac	gctcggcggg	840
tcttcgcgac	cgacccctat	cgcgcgccgc	cccggccggg	ccgccgaaag	catgcgggtc	900
gccttcgttc	aggaaagagt	gctcaagggtc	gcgcccgtcg	acggaacccg	cctgcaagtc	960
aagggtgcggg	acgtgaaggg	cgtgaaccgg	gccgagttca	atgccgcggg	cgcgggcaacg	1020
ttctcgttgt	cccattgtccc	cgcgggcccg	tatttcctgg	atgtgacggg	gccggatgta	1080
agacagatca	cgccgttcgt	tttgcgataa				1110

<210> 270

<211> 369

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 270

Met	Gly	Tyr	Asn	Arg	Ile	Ile	Gln	Ala	Ile	Arg	Val	Ser	Lys	Gly	Asp
1				5					10					15	
Val	Leu	Gly	Val	His	Lys	Val	Phe	Tyr	Ala	Ala	Leu	Ala	Cys	Val	Ala
			20					25					30		
Met	Gly	Tyr	Ser	Glu	Thr	Trp	Ala	Gln	Cys	Ala	Thr	Trp	Thr	Arg	Ser
		35					40					45			
Thr	Ile	Arg	Asn	Cys	Glu	Gly	Ile	Asp	Tyr	Glu	Leu	Trp	Asn	Gln	Asn
	50					55					60				
Asn	Arg	Gly	Thr	Val	Asn	Met	Glu	Ile	Thr	Gly	Asn	Gly	Thr	Phe	Ala
65					70				75					80	
Ala	Thr	Trp	Ser	Gly	Thr	Glu	Asn	Ile	Leu	Phe	Arg	Ala	Gly	Lys	Lys
			85						90					95	
Trp	Gly	Phe	Asn	Ser	Thr	Thr	Thr	Ala	Arg	Ser	Val	Gly	Ala	Ile	Thr
			100					105					110		
Leu	Asp	Phe	Ala	Ala	Thr	Trp	Thr	Ser	Ser	Asp	Asn	Val	Lys	Met	Leu
		115					120					125			
Gly	Ile	Tyr	Gly	Trp	Ala	Tyr	Tyr	Pro	Ser	Gly	Ser	Glu	Pro	Thr	Lys
	130					135					140				
Thr	Glu	Ser	Gly	Gln	Asn	Thr	Ser	Phe	Ser	Asp	Gln	Ile	Glu	Tyr	Tyr
145					150				155					160	
Ile	Ile	Gln	Asp	Arg	Gly	Gly	Phe	Asn	Pro	Gly	Ser	Gly	Gly	Val	Asn
				165					170					175	
Ala	Lys	Lys	Tyr	Gly	Glu	Ala	Val	Ile	Asp	Gly	Ile	Ala	Tyr	Asp	Phe
			180					185					190		
Trp	Val	Ala	Asp	Arg	Ile	Asn	Gln	Pro	Met	Leu	Thr	Gly	Arg	Gly	Asn
		195					200					205			
Phe	Lys	Gln	Tyr	Phe	Ser	Val	Pro	Arg	Asn	Thr	Ser	Ser	His	Arg	Gln
	210					215					220				
Ser	Gly	Ile	Val	Ser	Ile	Ser	Lys	His	Phe	Glu	Trp	Asp	Lys	Ala	
225					230				235					240	
Gly	Met	Lys	Met	Leu	Asp	Cys	Pro	Leu	Tyr	Glu	Val	Ala	Met	Lys	Val
			245						250				255		
Glu	Ser	Tyr	Thr	Gly	Ser	Ala	Asn	Gly	Gly	Gly	Ser	Ala	Asn	Val	Thr
			260					265					270		
Arg	Asn	Ile	Leu	Thr	Leu	Gly	Gly	Ser	Ser	Ala	Pro	Thr	Pro	Ile	Ala
		275					280					285			
Arg	Gly	Pro	Gly	Arg	Ser	Ala	Glu	Ser	Met	Arg	Val	Ala	Phe	Val	Gln
	290					295					300				
Glu	Arg	Val	Leu	Lys	Val	Ala	Pro	Val	Asp	Gly	Thr	Arg	Leu	Gln	Val

305 Lys Val Arg Asp Val 310 Lys Gly Val Asn Arg Ala Glu Phe Asn Ala 320
 Gly Ala Ala Thr 325 Phe Ser Leu Ser His Val Pro Ala Gly Pro Tyr Phe
 Leu Asp Val Thr 340 Gly Pro Asp Val 345 Arg Gln Ile Thr Pro Phe Val Leu
 Arg 355 360 365

<210> 271
 <211> 1128
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<400> 271
 atgttcattc acaacagcat atgcagcgca ctctgcacaa tctttttggc aactgcaaca 60
 atgggagaaa acatgacact acaagaagcc tttgccgac acttttatgt gggagccgcc 120
 atcagccaac gcctttttca accagatcgc gccgaaacgc tgcaactggc cgcgcaccaa 180
 ttcaacagca tcacagccga aaatgagatg aagtggcagt cgtaaatacc cactcctggc 240
 gaataccgtt tcgaaaacgc cgataaattc gtccgctttg gtgtcgaaaa cgatatgtac 300
 atcgttgggc acgttctctt ctggcacagc cagacaccgc actggctctt caaggatgac 360
 gacggtaact tcgtctcccg cgaagtctta ctgcaccgca tgcgcgcccc cgtgcgcaat 420
 cttgtccagc gctacggcaa ccatgtgcac gcctgggatg ttatcaatga aaccttcaat 480
 gataatgggt ccttgccgca cagcccatgg acgcaaacc tcggcgagga attcatcgag 540
 cagccttcc ggattgccgg cgaggaactc ccccccatg tcgagctgct ctacaatgat 600
 tattcgatga ccattcctgc caagcgcgat gctgttgctg aaatgggttcg cgacctcata 660
 gccaaaggca tccgcattga cggcgttggc atgcagggac attgggcacg gacccacccg 720
 accatagcgg acatagaaaa aagcattctt gccttcgcag gaaccggcgt acaggtagac 780
 atcactgagc tcgacatcga catgctgcca cgccatcccc agatgtttac tgggtggtgca 840
 gacaccatgt tgcgcctaca acaagatccc aaactcgacc cctacactga gggacttcca 900
 gcggaagatc agcaggcatt ggcagaacgc tacgcaagca tcttcggtt attcttgaag 960
 cacagcgatg ttattcgccg tgtcaccttc tgggggggtca ccgatgccca cacctggctc 1020
 aacaattggc ccattccgtg ccgcaccagc catccctgc tcttcgaccg ccagaacaac 1080
 cccaaacccg ctttcacgc cgtcgtcaga ctgaagaccg aagactga 1128

<210> 272
 <211> 375
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<221> SIGNAL
 <222> (1)...(22)

<400> 272
 Met Phe Ile His Asn Ser Ile Cys Ser Ala Leu Cys Thr Ile Phe Leu
 1 5 10 15
 Ala Thr Ala Thr Met Gly Glu Asn Met Thr Leu Gln Glu Ala Phe Ala
 20 25 30
 Asp His Phe Tyr Val Gly Ala Ala Ile Ser Gln Arg Leu Phe Gln Pro
 35 40 45
 Asp Arg Ala Glu Thr Leu Gln Leu Ala Ala His Gln Phe Asn Ser Ile
 50 55 60
 Thr Ala Glu Asn Glu Met Lys Trp Gln Ser Leu Asn Pro Thr Pro Gly
 65 70 75 80
 Glu Tyr Arg Phe Glu Asn Ala Asp Lys Phe Val Arg Phe Gly Val Glu
 85 90 95
 Asn Asp Met Tyr Ile Val Gly His Val Leu Phe Trp His Ser Gln Thr
 100 105 110
 Pro Asp Trp Leu Phe Lys Asp Asp Asp Gly Asn Phe Val Ser Arg Glu
 115 120 125
 Val Leu Leu Asp Arg Met Arg Ala His Val Arg Asn Leu Val Gln Arg
 130 135 140

Tyr Gly Asn His Val His Ala Trp Asp Val Ile Asn Glu Thr Phe Asn
 145 150 155 160
 Asp Asn Gly Ser Leu Arg Asp Ser Pro Trp Thr Gln Ile Leu Gly Glu
 165 170 175
 Glu Phe Ile Glu His Ala Phe Arg Ile Ala Gly Glu Glu Leu Pro Pro
 180 185 190
 His Val Glu Leu Leu Tyr Asn Asp Tyr Ser Met Thr Ile Pro Ala Lys
 195 200 205
 Arg Asp Ala Val Ala Glu Met Val Arg Asp Leu Ile Ala Lys Gly Ile
 210 215 220
 Arg Ile Asp Gly Val Gly Met Gln Gly His Trp Ala Arg Thr His Pro
 225 230 235 240
 Thr Ile Ala Asp Ile Glu Lys Ser Ile Leu Ala Phe Ala Gly Thr Gly
 245 250 255
 Val Gln Val His Ile Thr Glu Leu Asp Ile Asp Met Leu Pro Arg His
 260 265 270
 Pro Gln Met Phe Thr Gly Gly Ala Asp Thr Met Leu Arg Leu Gln Gln
 275 280 285
 Asp Pro Lys Leu Asp Pro Tyr Thr Glu Gly Leu Pro Ala Glu Asp Gln
 290 295 300
 Gln Ala Leu Ala Glu Arg Tyr Ala Ser Ile Phe Arg Leu Phe Leu Lys
 305 310 315 320
 His Ser Asp Val Ile Arg Arg Val Thr Phe Trp Gly Val Thr Asp Ala
 325 330 335
 His Thr Trp Leu Asn Asn Trp Pro Ile Arg Gly Arg Thr Ser His Pro
 340 345 350
 Leu Leu Phe Asp Arg Gln Asn Asn Pro Lys Pro Ala Phe His Ala Val
 355 360 365
 Val Arg Leu Lys Thr Glu Asp
 370 375

<210> 273
 <211> 1134
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<400> 273
 atggtttcat cgctaataca ttcttcatac attcggctca agcactattc gtgctcaagt 60
 ttattgctcc tgacattggc agcctgtggc ggccagcagc ctccccgga tacgggatcc 120
 agcacttcaa gttcaagcag ttcttcgagc tccagttcaa gcagctcttc aagttccagc 180
 tcaagcagtt ctccagctc cagctcgagc agctcttcga gttcgagctc ttcacatcc 240
 agctcttcag gggcaaaccc gccaccgacc gggggcaagt tcgtcggcaa catcacgacc 300
 cgaggcgccg tccaagcgga ctctattcag tactgggata aaattacgcc ggagaacgag 360
 ggcaaatggg gttctgtgga aggaactcgc gaccagtaca actgggcgcc tcttgatcgc 420
 atctatgact atgcacgtca gcacaatatc ccagtcaaag cgcatacgct ggtttggggg 480
 gcacaggctc caggctggat caacaatctg agtgcgccg agcagcgtga ggaaatcgag 540
 gaatggattc gtgattactg cacgcgttac ccagacacc aaatgatcga cgtagttaac 600
 gaggcgcacc caaatcacgc ccccgctcgc tatgcgcaga atgccttcgg caatgactgg 660
 attaccgaag cgttcaaact ggcgcgccgg cactgcccc aacgcatctt gatctacaac 720
 gactataatt tcatcacttg ggataccgat gaaatcatgg cgctgattcg cccggctatc 780
 gcagcagggg tagtggatgc ggtagggtcg caggcgcata gcttgatcc tgacgaatac 840
 gctaacaaga tgtggagtgc cgctgaaata cagcagaagc tcgatctgat ctctaccctt 900
 ggcgtgccga tgtatatctt ggaatatgat gtcgccaaag ccaatgacca agagcagttg 960
 gcgattttca gcgagcagtt cccggtcctt tacgaacacc ccaatgtcgt aggtgtaacc 1020
 ctctggggct atattgatgg agcgacgtgg cgcgccggct cgggcttgat tcgaaacggt 1080
 cagcaccggc ccgccatgca atggctgctc gagtacttgg agaacaatcg atag 1134

<210> 274
 <211> 377
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<221> SIGNAL

<222> (1)...(74)

<400> 274

Met Val Ser Ser Leu Ile Asn Ser Ser Tyr Ile Arg Leu Lys His Tyr
 1 5 10 15
 Ser Cys Ser Ser Leu Leu Leu Thr Leu Ala Ala Cys Gly Gly Gln
 20 25 30
 Gln Pro Pro Pro Asp Thr Gly Ser Ser Thr Ser Ser Ser Ser Ser
 35 40 45
 Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser
 50 55 60
 Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser
 65 70 75 80
 Ser Ser Ser Gly Ala Asn Pro Pro Pro Thr Gly Gly Lys Phe Val Gly
 85 90 95
 Asn Ile Thr Thr Arg Gly Ala Val Gln Ala Asp Phe Ile Gln Tyr Trp
 100 105 110
 Asp Gln Ile Thr Pro Glu Asn Glu Gly Lys Trp Gly Ser Val Glu Gly
 115 120 125
 Thr Arg Asp Gln Tyr Asn Trp Ala Pro Leu Asp Arg Ile Tyr Asp Tyr
 130 135 140
 Ala Arg Gln His Asn Ile Pro Val Lys Ala His Thr Leu Val Trp Gly
 145 150 155 160
 Ala Gln Ala Pro Gly Trp Ile Asn Asn Leu Ser Ala Ala Glu Gln Arg
 165 170 175
 Glu Glu Ile Glu Glu Trp Ile Arg Asp Tyr Cys Thr Arg Tyr Pro Asp
 180 185 190
 Thr Gln Met Ile Asp Val Val Asn Glu Ala His Pro Asn His Ala Pro
 195 200 205
 Ala Arg Tyr Ala Gln Asn Ala Phe Gly Asn Asp Trp Ile Thr Glu Ala
 210 215 220
 Phe Lys Leu Ala Arg Arg His Cys Pro Asn Ala Ile Leu Ile Tyr Asn
 225 230 235 240
 Asp Tyr Asn Phe Ile Thr Trp Asp Thr Asp Glu Ile Met Ala Leu Ile
 245 250 255
 Arg Pro Ala Ile Ala Ala Gly Val Val Asp Ala Val Gly Leu Gln Ala
 260 265 270
 His Ser Leu Tyr Pro Asp Glu Tyr Ala Asn Lys Met Trp Ser Ala Ala
 275 280 285
 Glu Ile Gln Gln Lys Leu Asp Leu Ile Ser Thr Leu Gly Val Pro Met
 290 295 300
 Tyr Ile Ser Glu Tyr Asp Val Ala Lys Ser Asn Asp Gln Glu Gln Leu
 305 310 315 320
 Ala Ile Phe Ser Glu Gln Phe Pro Val Leu Tyr Glu His Pro Asn Val
 325 330 335
 Val Gly Val Thr Leu Trp Gly Tyr Ile Asp Gly Ala Thr Trp Arg Ala
 340 345 350
 Gly Ser Gly Leu Ile Arg Asn Gly Gln His Arg Pro Ala Met Gln Trp
 355 360 365
 Leu Leu Glu Tyr Leu Glu Asn Asn Arg
 370 375

<210> 275

<211> 1401

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 275

ttggg	gcgctg	atccatttgc	gctcacctat	aacggaagag	tgtacattta	tatgtcgagt	60
gatgactatg	aatatcacag	caatggaacg	attaaggata	attcttttgc	caatttgaat		120
agggtctttg	tcattctctt	agcagatatg	gtgaactgga	cagatcatgg	cgcgattcca		180
gtagctg	gggg	caaatggcgc	aaatggcggc	aaaggaattg	ccaaatgggc	aggtgcttcc	240
tgggctccat	cagcagcggt	gaaaaaaatc	aatgggaagg	ataaattttt	cctttatttc		300
gcgaacagcg	gcggagggat	tggcgttctg	acagcagact	cccccatcgg	tccatggaca		360
gatacctatcg	gaaaagcact	cgtcacgcca	aatacaccag	ggatggctgg	agttgtatgg		420
ctttttgatc	ctgccgtttt	tgtagatgat	gacggcactg	gttatctata	tgccggcgga		480

ggtgtttccag	gcggtttctaa	tccaacgcag	ggacaatggg	cgaatcctaa	aacagcaaga	540
gttctaaaac	taggacctga	tatgacaagt	gtggtaggca	gcgcatcaac	cattgatgct	600
ccttttatgt	ttgaagattc	ggggatgcat	aagtataacg	gaacctatta	ctattcctat	660
tgcatcaact	ttggcggctc	ccaccagca	gataaaccac	ctggtgagat	cggttatatg	720
acgagctcaa	gtccgatggg	tccctttacg	tatagagggc	acttcctgaa	aaatccgggt	780
gcatttttcg	ggggaggcgg	taataaccat	catgctgtgt	tcaattttta	aaacgagtgg	840
tatgtcgtgt	atcataccca	aacggtcagc	tctgctttat	acggatcagg	aaaaggctac	900
agatctccgc	atattaataa	acttgtgcat	aatgctgacg	gctcccttcg	agaagtcgca	960
gccaattttg	aaggggttaa	acagcttttc	aacctgaatc	cttatcagcg	tgtagaagct	1020
gaaacattcg	catggaatgg	acgcattttg	acagaggcat	cttcagctcc	aggcggaccg	1080
gtcaataacc	agcatgtcac	aaacattcaa	aacggagatt	gggtggctgc	cagtaacgtc	1140
gatttcggat	caaacggcgc	gaggacattt	aaagcgaatg	tagcatcaaa	tacaggcggg	1200
aaaatagaag	tacgcctcgg	aagtccagac	ggcagactcg	tcggaacact	gaatgtccct	1260
tccacagggg	gaacaaataa	ctggcgagaa	gtagaaacgg	cagtaaattg	agcagcaggc	1320
gtgcacaacg	tattttttgt	ttttactgga	acagggtgcaa	atctatttca	atttgattcc	1380
tggcagttta	ctcaaaggta	a				1401

<210> 276

<211> 466

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 276

Met	Gly	Ala	Asp	Pro	Phe	Ala	Leu	Thr	Tyr	Asn	Gly	Arg	Val	Tyr	Ile
1				5					10					15	
Tyr	Met	Ser	Ser	Asp	Asp	Tyr	Glu	Tyr	His	Ser	Asn	Gly	Thr	Ile	Lys
			20					25					30		
Asp	Asn	Ser	Phe	Ala	Asn	Leu	Asn	Arg	Val	Phe	Val	Ile	Ser	Ser	Ala
		35					40					45			
Asp	Met	Val	Asn	Trp	Thr	Asp	His	Gly	Ala	Ile	Pro	Val	Ala	Gly	Ala
	50					55					60				
Asn	Gly	Ala	Asn	Gly	Gly	Lys	Gly	Ile	Ala	Lys	Trp	Ala	Gly	Ala	Ser
65					70				75					80	
Trp	Ala	Pro	Ser	Ala	Ala	Val	Lys	Lys	Ile	Asn	Gly	Lys	Asp	Lys	Phe
				85					90					95	
Phe	Leu	Tyr	Phe	Ala	Asn	Ser	Gly	Gly	Gly	Ile	Gly	Val	Leu	Thr	Ala
			100				105						110		
Asp	Ser	Pro	Ile	Gly	Pro	Trp	Thr	Asp	Pro	Ile	Gly	Lys	Ala	Leu	Val
		115					120					125			
Thr	Pro	Asn	Thr	Pro	Gly	Met	Ala	Gly	Val	Val	Trp	Leu	Phe	Asp	Pro
	130					135					140				
Ala	Val	Phe	Val	Asp	Asp	Asp	Gly	Thr	Gly	Tyr	Leu	Tyr	Ala	Gly	Gly
145					150					155					160
Gly	Val	Pro	Gly	Gly	Ser	Asn	Pro	Thr	Gln	Gly	Gln	Trp	Ala	Asn	Pro
			165						170					175	
Lys	Thr	Ala	Arg	Val	Leu	Lys	Leu	Gly	Pro	Asp	Met	Thr	Ser	Val	Val
			180					185						190	
Gly	Ser	Ala	Ser	Thr	Ile	Asp	Ala	Pro	Phe	Met	Phe	Glu	Asp	Ser	Gly
		195					200					205			
Met	His	Lys	Tyr	Asn	Gly	Thr	Tyr	Tyr	Tyr	Ser	Tyr	Cys	Ile	Asn	Phe
	210					215					220				
Gly	Gly	Ser	His	Pro	Ala	Asp	Lys	Pro	Pro	Gly	Glu	Ile	Gly	Tyr	Met
225					230					235					240
Thr	Ser	Ser	Ser	Pro	Met	Gly	Pro	Phe	Thr	Tyr	Arg	Gly	His	Phe	Leu
				245					250					255	
Lys	Asn	Pro	Gly	Ala	Phe	Phe	Gly	Gly	Gly	Gly	Asn	Asn	His	His	Ala
			260				265						270		
Val	Phe	Asn	Phe	Lys	Asn	Glu	Trp	Tyr	Val	Val	Tyr	His	Thr	Gln	Thr
		275					280					285			
Val	Ser	Ser	Ala	Leu	Tyr	Gly	Ser	Gly	Lys	Gly	Tyr	Arg	Ser	Pro	His
	290					295					300				
Ile	Asn	Lys	Leu	Val	His	Asn	Ala	Asp	Gly	Ser	Leu	Arg	Glu	Val	Ala
305					310					315					320
Ala	Asn	Phe	Glu	Gly	Val	Lys	Gln	Leu	Ser	Asn	Leu	Asn	Pro	Tyr	Gln
			325						330					335	
Arg	Val	Glu	Ala	Glu	Thr	Phe	Ala	Trp	Asn	Gly	Arg	Ile	Leu	Thr	Glu

340 345 350
 Ala Ser Ser Ala Pro Gly Gly Pro Val Asn Asn Gln His Val Thr Asn
 355 360 365
 Ile Gln Asn Gly Asp Trp Val Ala Ala Ser Asn Val Asp Phe Gly Ser
 370 375 380
 Asn Gly Ala Arg Thr Phe Lys Ala Asn Val Ala Ser Asn Thr Gly Gly
 385 390 395 400
 Lys Ile Glu Val Arg Leu Gly Ser Pro Asp Gly Arg Leu Val Gly Thr
 405 410 415
 Leu Asn Val Pro Ser Thr Gly Gly Thr Asn Asn Trp Arg Glu Val Glu
 420 425 430
 Thr Ala Val Asn Gly Ala Ala Gly Val His Asn Val Phe Phe Val Phe
 435 440 445
 Thr Gly Thr Gly Ala Asn Leu Phe Gln Phe Asp Ser Trp Gln Phe Thr
 450 455 460
 Gln Arg
 465

<210> 277
 <211> 1128
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<400> 277
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 aatcaggata gagtaccatc cctgcacgcc gagttctcgg atgcattttt gattggaacg 120
 gcgctgaatt ctgagcagat attgggtcgg gatacacgcg gactcgaatt gattagaact 180
 cattttaacg ccattacgcc cgaaaacatt accaaatggg aggctatcca tcccgaaccc 240
 ggtgtctatg attttaaaga ggctgatgca ttcgtcgatt ttggccaaaa atataatatg 300
 ttcattgggtg gtcatacact gggttgatc agtcagacac cgcgctgggt cttcaaagac 360
 gaaaaatggcg cggttggtatc gcgcgaggtta ctggttagagc ggatgcgcga ccacatccac 420
 accgttggtg gccgctaccg tggacgtatt cacggctggg atgtcgtaaa cgaagccctc 480
 aatgaagacg gttcgtacag agaaacactg tgggtacaaa taattggtac ggactatatt 540
 cttaaagcat tcgaatttgc ccgggaggcc gatcccgcag ctgagctata ctataacgat 600
 tactcgcttg agaaccctc aaagagagcc ggcgcgatgc gaattgttca atacctgcag 660
 gaacatggtg ctccgattac tgggggttggg acccaggggc atttcaccct cgactggccc 720
 gaactttctg aaattgaaca gaccgtcatt gattttgcct cccttggtat ggatgtaatg 780
 attaccgaat tggatatcga tgtactgcct cagccagacg attatactgg cgccgatgtg 840
 aattttagcg cagagcttta cgagaactg aacccatggc ccaacggcct tccaccggaa 900
 attgaacagg aattggccaa tcgatatgcc gacatcttcg aaatctattt gcgtcatcgt 960
 gataaagtta cgcgagtgtc tttttggggg gtcacagatg gcgactcgtg gaaaaataac 1020
 tggcctgtgc caggctgtac caactatccg ctcatctttg atcgaaactg gaagccaaaa 1080
 cccgcttttt tctcgattgt tgatgcagcc agggaggcac tggattaa 1128

<210> 278
 <211> 375
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<221> SIGNAL
 <222> (1)...(19)

<400> 278
 Met Arg Asn Thr Leu Ile Leu Ile Pro Ala Leu Met Met Leu Ser
 1 5 10 15
 Cys Ser Ala Gly Asn Gln Asp Arg Val Pro Ser Leu His Ala Glu Phe
 20 25 30
 Ser Asp Ala Phe Leu Ile Gly Thr Ala Leu Asn Ser Glu Gln Ile Leu
 35 40 45
 Gly Arg Asp Thr Arg Gly Leu Glu Leu Ile Arg Thr His Phe Asn Ala
 50 55 60
 Ile Thr Pro Glu Asn Ile Thr Lys Trp Glu Ala Ile His Pro Glu Pro
 65 70 75 80

Gly Val Tyr Asp Phe Lys Glu Ala Asp Ala Phe Val Asp Phe Gly Gln
 85 90 95
 Lys Tyr Asn Met Phe Met Val Gly His Thr Leu Val Trp His Ser Gln
 100 105 110
 Thr Pro Arg Trp Val Phe Lys Asp Glu Asn Gly Ala Leu Val Ser Arg
 115 120 125
 Glu Val Leu Leu Glu Arg Met Arg Asp His Ile His Thr Val Val Gly
 130 135 140
 Arg Tyr Arg Gly Arg Ile His Gly Trp Asp Val Val Asn Glu Ala Leu
 145 150 155 160
 Asn Glu Asp Gly Ser Tyr Arg Glu Thr Leu Trp Tyr Gln Ile Ile Gly
 165 170 175
 Thr Asp Tyr Ile Leu Lys Ala Phe Glu Phe Ala Arg Glu Ala Asp Pro
 180 185 190
 Asp Ala Glu Leu Tyr Tyr Asn Asp Tyr Ser Leu Glu Asn Pro Ser Lys
 195 200 205
 Arg Ala Gly Ala Met Arg Ile Val Gln Tyr Leu Gln Glu His Gly Ala
 210 215 220
 Pro Ile Thr Gly Val Gly Thr Gln Gly His Phe Thr Leu Asp Trp Pro
 225 230 235 240
 Glu Leu Ser Glu Ile Glu Gln Thr Val Ile Asp Phe Ala Ser Leu Gly
 245 250 255
 Met Asp Val Met Ile Thr Glu Leu Asp Ile Asp Val Leu Pro Gln Pro
 260 265 270
 Asp Asp Tyr Thr Gly Ala Asp Val Asn Phe Ser Ala Glu Leu Tyr Asp
 275 280 285
 Glu Leu Asn Pro Trp Pro Asn Gly Leu Pro Pro Glu Ile Glu Gln Glu
 290 295 300
 Leu Ala Asn Arg Tyr Ala Asp Ile Phe Glu Ile Tyr Leu Arg His Arg
 305 310 315 320
 Asp Lys Val Thr Arg Val Ser Phe Trp Gly Val Thr Asp Gly Asp Ser
 325 330 335
 Trp Lys Asn Asn Trp Pro Val Pro Gly Arg Thr Asn Tyr Pro Leu Ile
 340 345 350
 Phe Asp Arg Asn Trp Lys Pro Lys Pro Ala Phe Phe Ser Ile Val Asp
 355 360 365
 Ala Ala Arg Glu Ala Leu Asp
 370 375

<210> 279

<211> 786

<212> DNA

<213> Unknown

<220>

<223> obtained from an environmental sample.

<400> 279

atgcttttctc	cgacaaggaa	actcccgccg	gccattggac	tcaccttcct	cttcgccgct	60
tcggcgacgc	cggaaaccac	gctcaaggac	gccttcgcgg	accattttct	cgtcggggcg	120
gcgctcaatg	aatcgcactt	tgcggagcac	aatccggcgc	acgccggtct	cgtcgccgca	180
aacttcaatg	cgatcaccgc	ggagaatgtg	atgaaatggg	aggccgttca	tccccggccg	240
ggagaatata	cgttcggcgc	cgcggaaccg	ttcgttgagt	tcggggaaaa	gaacggcctg	300
ttcatcgtgg	ggcacacgct	gatctggcat	tctcaaacgc	cggcctgggt	tttcgaggat	360
gagaatggcg	cgccgctcgg	ccgcgaggcg	ctgctggagc	ggatgcgcga	tcacattcac	420
accgttgccg	gacgttacag	gggccgtgtg	aaggggtggg	acgtggtcaa	cgaagccctc	480
gccgaggacg	gttccctgcg	ggattcgccg	tggcgccgca	tcataggcga	cgactatttc	540
gtgaaggcct	ttgagtttgc	gcgggaagct	gatccggatg	cggagttgta	ttacaacgat	600
tactcgattg	aaaacgaacc	gaagcgcaag	ggggcggttg	cgttggtgag	gacgctccag	660
gcggcggggtg	ttcccgttgc	cggcggtggg	attcagggac	acggcaatct	ccattggcct	720
tctccgcggc	ttgtcgaaga	ggcgatccgg	gactttgcca	gtttgggcgt	caaggtgatg	780
atctga						786

<210> 280

<211> 261

<212> PRT

<213> Unknown

<220>

<223> obtained from an environmental sample.

<221> SIGNAL

<222> (1)...(22)

<400> 280

```

Met Leu Ser Pro Thr Arg Lys Leu Pro Pro Ala Ile Gly Leu Thr Phe
 1          5          10          15
Leu Phe Ala Ala Ser Ala Thr Pro Glu Thr Thr Leu Lys Asp Ala Phe
          20          25          30
Ala Asp His Phe Leu Val Gly Ala Ala Leu Asn Glu Ser His Phe Ala
          35          40          45
Glu His Asn Pro Ala His Ala Gly Leu Val Ala Ala Asn Phe Asn Ala
          50          55          60
Ile Thr Ala Glu Asn Val Met Lys Trp Glu Ala Val His Pro Arg Pro
65          70          75          80
Gly Glu Tyr Thr Phe Gly Ala Ala Asp Arg Phe Val Glu Phe Gly Glu
          85          90          95
Lys Asn Gly Leu Phe Ile Val Gly His Thr Leu Ile Trp His Ser Gln
          100          105          110
Thr Pro Ala Trp Val Phe Glu Asp Glu Asn Gly Ala Pro Leu Gly Arg
          115          120          125
Glu Ala Leu Leu Glu Arg Met Arg Asp His Ile His Thr Val Ala Gly
          130          135          140
Arg Tyr Arg Gly Arg Val Lys Gly Trp Asp Val Val Asn Glu Ala Leu
145          150          155          160
Ala Glu Asp Gly Ser Leu Arg Asp Ser Pro Trp Arg Arg Ile Ile Gly
          165          170          175
Asp Asp Tyr Phe Val Lys Ala Phe Glu Phe Ala Arg Glu Ala Asp Pro
          180          185          190
Asp Ala Glu Leu Tyr Tyr Asn Asp Tyr Ser Ile Glu Asn Glu Pro Lys
          195          200          205
Arg Lys Gly Ala Val Ala Leu Val Arg Thr Leu Gln Ala Ala Gly Val
210          215          220
Pro Val Ala Gly Val Gly Ile Gln Gly His Gly Asn Leu His Trp Pro
225          230          235          240
Ser Pro Arg Leu Val Glu Glu Ala Ile Arg Asp Phe Ala Ser Leu Gly
          245          250          255
Val Lys Val Met Ile
          260

```

<210> 281

<211> 963

<212> DNA

<213> Unknown

<220>

<223> obtained from an environmental sample.

<400> 281

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acgcagtaca gcatcatcac cccggaaaac gagctcaagc ccgattccgt tctggatgtg      120
gctgccagcc gtgctctggc caaggaggac gataccgccg tggccgtgca tttagcgcc      180
gccgctccca tcctgaactt tgcccgtgac aacggcatca aggtgcacgg tcatgtgctg      240
gtctggcaca gccagactcc cgaggagttc ttccacgagg gctataacgc ctccgcgccc      300
tatgtgagcc gcgaggtgat gctggcccggt ctggacaact acatccgtct catcttgaa      360
tatatggatg aaaactatcc cggcctgata gtgtcctggg atgtggccaa cgaatgcgtg      420
gccgacggct ccaccgccct gcgcacctcc aactggaccc gcgtgggtggg gcaggatttt      480
gtggcccgcg ccttcgagat cgccgataaa tacgcgcccg aagatgtgat gctctgctac      540
aacgattatt ccactcccta tgagcccaag ctaccggca tcgtgaacct gctcaccgag      600
ctgacacagg aggggtcatat cgacggctac ggcttcacaga gccactacag tgtcggcgat      660
ccctccctgc aggcggctga gaacgcgttc aaaaagatct ccgccctggg gctcaagctg      720
cgcgtagcgc agctggacat caaggtagat gccgacagcg agcccaaccg cgcccttcag      780
gccgaccggg atgagccctt gctgcgcata tatatgaaat acggcgctcag cgccgtgcag      840
gtgtggggcg tatgcgacgg caccagctgg atcggcgcgga gctatccctt ccccttgac      900
gccgggctgc gtcccaagcc ctcttcttc ggcatactcc gcgcccttga cgaacagaac      960
tga                                         963

```

<210> 282

<211> 320
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<400> 282

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Met Gly Thr Cys Met Ser Gly Ala Asp Ser Arg Asn Pro Ala Arg Leu
 1      5      10      15
Glu Leu Ile Arg Thr Gln Tyr Ser Ile Thr Pro Glu Asn Glu Leu
 20      25      30
Lys Pro Asp Ser Val Leu Asp Val Ala Ala Ser Arg Ala Leu Ala Lys
 35      40      45
Glu Asp Asp Thr Ala Val Ala Val His Phe Ser Ala Ala Pro Ile
 50      55      60
Leu Asn Phe Ala Arg Asp Asn Gly Ile Lys Val His Gly His Val Leu
 65      70      75      80
Val Trp His Ser Gln Thr Pro Glu Glu Phe Phe His Glu Gly Tyr Asn
 85      90      95
Ala Ser Ala Pro Tyr Val Ser Arg Glu Val Met Leu Ala Arg Leu Asp
100      105      110
Asn Tyr Ile Arg Leu Ile Phe Glu Tyr Met Asp Glu Asn Tyr Pro Gly
115      120      125
Leu Ile Val Ser Trp Asp Val Ala Asn Glu Cys Val Ala Asp Gly Ser
130      135      140
Thr Ala Leu Arg Thr Ser Asn Trp Thr Arg Val Val Gly Gln Asp Phe
145      150      155      160
Val Ala Arg Ala Phe Glu Ile Ala Asp Lys Tyr Ala Pro Glu Asp Val
165      170      175
Met Leu Cys Tyr Asn Asp Tyr Ser Thr Pro Tyr Glu Pro Lys Leu Thr
180      185      190
Gly Ile Val Asn Leu Leu Thr Glu Leu Thr Gln Glu Gly His Ile Asp
195      200      205
Gly Tyr Gly Phe Gln Ser His Tyr Ser Val Gly Asp Pro Ser Leu Gln
210      215      220
Ala Val Glu Asn Ala Phe Lys Lys Ile Ser Ala Leu Gly Leu Lys Leu
225      230      235      240
Arg Val Ser Glu Leu Asp Ile Lys Val Asp Ala Asp Ser Glu Pro Asn
245      250      255
Arg Ala Leu Gln Ala Asp Arg Tyr Glu Ala Leu Leu Arg Ile Tyr Met
260      265      270
Lys Tyr Gly Val Ser Ala Val Gln Val Trp Gly Val Cys Asp Gly Thr
275      280      285
Ser Trp Ile Gly Ala Ser Tyr Pro Leu Pro Phe Asp Ala Gly Leu Arg
290      295      300
Pro Lys Pro Ser Phe Phe Gly Ile Leu Arg Ala Leu Asp Glu Gln Asn
305      310      315      320

```

<210> 283
 <211> 4161
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<400> 283

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atgtataaaa gtttcgtcaa gaaagtctcc cttgtattat ctactctttt gctcttagtt      60
tcggcgtttc ctgtctcata tgcacaaatg aattccatcc ccgtttatga agaaacgttt      120
gaaaaccaag gaaactatgt ccaatctggg ggtgcgaccc tcactctagt aaaaaacaaa      180
gtgtttgcag ggaatgaaga tggaactgca ctatatatta gtaatcgatc gaataactgg      240
gacggggcag atttccgttt cacggatcct ggattacaag atggaaaaac atatacgatc      300
aatattatag gatatgtcga tgaaaatgaa gttgttcctt caggagccca agtgattttg      360
caaactgtag ataaaacata tggatgggta gcaagcgcgg acttaaaaaa cggagagtcg      420
ttcactataa atacaacggt cacccttgac atgagtaaaag gggacaccgg tcttcgtata      480
caatccaacg atagtggtaa aaaagtttca ttttacgtcg ggtatttttc aatttcaatt      540
agtgatgtag aaggagaaga tgggtgggagc tctatttcaa ggccaccggc ttacctttt      600
gaaactattg actttgaaga tcaaagttta agtggatttg agggacgagc aggcacggaa      660

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acattgaccg	ttacgaatga	agcaaataga	actcctggag	gatcttatgc	actaaaagtg	720
gaaaatagat	ctcaaaattg	gcatggacct	tccttacgca	tcgagaaata	tattgattta	780
ggttacgaat	atacaatttc	tctatgggtt	aaacttaitt	caccacaag	tgcacaaatt	840
cagctttcta	cccaagtcgg	aagtgggaag	gggtgcgagtt	ataacaatat	tttaagtaaa	900
gtaattagt	ttgatgatgg	atgggtactg	tatgaaggaa	agtatcgcta	caatagttcg	960
ggagggggaat	atttaacaat	ttacgtagaa	agcccaaaaca	atagtactgc	atctttttac	1020
atcgatgata	ttcgtttaat	aaagagtggg	gaccaaatct	ctgtacaaaa	agatcttctc	1080
cctatcaaga	gtgtttatga	aggtgacttc	ttagttggta	gtgccgtatc	agcgactgat	1140
ttagagggag	agagactcga	gcttctcaag	ttgcattaca	atagcataac	agcggaaaac	1200
gccaatgaaac	ctagctattt	acaacctact	aaaggaaact	ttaccttcga	agcagcagat	1260
agtattgtaa	ataaagccct	agaagaagga	atgaaagtac	atggacatgt	tctcgtatgg	1320
catcagcaga	cacctgaatg	gatgaccact	agagaagatg	gaagccctct	cggcagggaa	1380
gaagcggttag	aaaatctaaa	aaatcacatt	gaaacagtta	tgaacatttt	tggtgataga	1440
gtaatttcat	gggatgttgt	caatgaagct	atcattgata	atccaccta	tcctgataat	1500
tggggggaat	cattaaagaa	atcaccatgg	tactattcaa	tcggttctga	ttatgttgag	1560
caagcattcc	gaattgcacg	acaagttttg	gacgaaaatg	gggtgggat	taagctatat	1620
tacaatgatt	acaatgaaga	taatcaaaga	aaagcacaag	ccatttacca	tatggtaaaa	1680
gagcttaatg	aaaaatatgc	acaagagcat	cctggtaaaa	gattaatcga	tggaattgga	1740
atgcaagggc	aggaacaagt	acgaacaagt	ccagataatg	tgaaaatgic	attagaaga	1800
tttattttccc	ttggtgtgga	agttagtatt	actgaactcg	atattcaagc	tggaacggat	1860
aatcatctta	cgaagaaca	gtcaaaagca	caagcatatt	tatacgctaa	attattcaaa	1920
atattcaaaag	aaaatgcatc	gcatatctcc	cgagttacgt	tatggggatt	aaatgatgcg	1980
gcaagttggc	gtgctcaac	aagtccattg	ttatttgatc	gaaatttaca	ggccaaacca	2040
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gagtcgcgga	aagcaattgc	tttgtatggt	atccctgtaa	ttgatggaag	catcgattcc	2160
atttgggaaa	gtgttcctta	catccctatt	gatcggtacc	aaatggcgtg	gcaaggagca	2220
agcggaaactg	ctaaagtctt	ttgggacgaa	gggaatctgt	atgtattagt	acaagttaac	2280
gatgaccagt	tagatacaat	gagtacaaat	ccttgggagc	aggattcgat	agaggtgttt	2340
gtggacgaaa	ataatgcaaa	aacatcgttt	taccaagagg	atgatggaca	atataagata	2400
aactttgaca	acgaaacatc	gtttaatcca	ccaagcattg	aaaatggatt	tatgtccgaa	2460
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ctaaaaaatg	ggtctgaaat	agggtttgat	gttcaaatta	atgatgggaa	aaatggtgct	2580
cgtcagagtg	tggctgcttg	gaatgatacg	actggaactg	catatatgga	tacatctgta	2640
ttcgggacac	ttactctttt	aaccacttta	gataatgaaa	atacaccagg	cagcggcaca	2700
acaccaggta	gtggcacaac	accaggcagt	ggcacaacac	caggcagcag	cacaacacca	2760
ggcagcggta	caacaccagg	tagcggcaca	acaccaggca	gtggcacaac	accaggcagc	2820
ggcacaacac	caggcagtg	cacaacacca	ggcagttggc	caacaccggg	cagcggta	2880
acaccaggca	gtggcacaac	accaggcagt	ggtaacaacac	cgggcagtg	cacaacacca	2940
gtgaaggggtg	aaaatggtac	ggttggttta	cagccgaaag	tagagacgaa	agaaaaagac	3000
ggcaagtag	tagaaaaagt	ggcaactatt	tcaacaaatg	aagttgaagc	gattgtcaag	3060
gagctgtcga	atgaaaaata	acaagtcgtc	gtctccctcg	gctcgcttcc	aaaagggtga	3120
gccacaaaag	tagatgtgcc	agctacatta	tttacacaag	cggcaataaa	acaagcagaa	3180
gcaacgattg	tgagcgccag	tgaacaagcg	acgtacaaat	tgccagtcaa	agaagtgcag	3240
gcgtctcttg	cgacgattgc	ccggtcactc	ggtgcaacga	tagaacaagt	tagcatctcg	3300
attgaaatga	aagtgaacga	tgccgcttca	ctacgtgtga	aaccgttgct	tgatgcggtg	3360
gagtttcatg	tcgtggcgaa	agcaaatgga	aaggaacgcg	tcacgcagtc	gtttactcaa	3420
tatgtcgaac	gcgaaatcgc	gttaaaagca	tcggtcaacg	ctagtcgtgc	cattgcagtg	3480
cgctggaacg	atgacggttc	acttacccca	gtaccgacaa	cgtttggttg	caacaaagca	3540
gtcattaaat	cgttgacgaa	ctcgacgtat	gttggtgtgg	aaggaacaca	tacatttagt	3600
gacatccaac	cacattgggc	gaaaggttat	attgaaacac	tcgcggcaaa	acagcttgct	3660
aaaggggatga	cggacacaac	atatcgacca	aatgatcggg	tgacgcgcgc	gcaatttgcg	3720
gtgttgctcg	tacgggctgc	aggattgccg	agcgaacgt	atgacggctg	ctttgctgat	3780
gtgaagggaa	cggagtgggt	taacaagaac	ggtgaattag	cagcggcagt	caagttcgga	3840
atcattcaag	gaaaaacagc	ttatatgttt	gcgcgcaatg	agccaatcac	tcgcgcacaa	3900
gcagctgtca	tgatcgaacg	ggcattgaaa	ctttcgatcg	ttggctatga	tgaggcaaca	3960
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aaacaggcga	ttgaagcagt	ataccaagca	ggcatcatgc	aaggacgaga	tagcggaaac	4080
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<210> 284
 <211> 1386
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<221> SIGNAL

<222> (1)...(28)

<400> 284

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 35 40 45
 Ser Gly Gly Ala Thr Leu Thr Leu Val Lys Asn Lys Val Phe Ala Gly
 50 55 60
 Asn Glu Asp Gly Thr Ala Leu Tyr Ile Ser Asn Arg Ser Asn Asn Trp
 65 70 75 80
 Asp Gly Ala Asp Phe Arg Phe Thr Asp Leu Gly Leu Gln Asp Gly Lys
 85 90 95
 Thr Tyr Thr Ile Asn Ile Ile Gly Tyr Val Asp Glu Asn Glu Val Val
 100 105 110
 Pro Ser Gly Ala Gln Val Tyr Leu Gln Thr Val Asp Lys Thr Tyr Gly
 115 120 125
 Trp Leu Ala Ser Ala Asp Leu Lys Asn Gly Glu Ser Phe Thr Ile Asn
 130 135 140
 Thr Thr Phe Thr Leu Asp Met Ser Lys Gly Asp Thr Arg Leu Arg Ile
 145 150 155 160
 Gln Ser Asn Asp Ser Gly Lys Lys Val Ser Phe Tyr Val Gly Tyr Phe
 165 170 175
 Ser Ile Ser Ile Ser Asp Val Glu Gly Glu Asp Gly Gly Ser Ser Ile
 180 185 190
 Ser Arg Pro Pro Ala Leu Pro Phe Glu Thr Ile Asp Phe Glu Asp Gln
 195 200 205
 Ser Leu Ser Gly Phe Glu Gly Arg Ala Gly Thr Glu Thr Leu Thr Val
 210 215 220
 Thr Asn Glu Ala Asn Arg Thr Pro Gly Gly Ser Tyr Ala Leu Lys Val
 225 230 235 240
 Glu Asn Arg Ser Gln Asn Trp His Gly Pro Ser Leu Arg Ile Glu Lys
 245 250 255
 Tyr Ile Asp Leu Gly Tyr Glu Tyr Thr Ile Ser Leu Trp Val Lys Leu
 260 265 270
 Ile Ser Pro Thr Ser Ala Gln Ile Gln Leu Ser Thr Gln Val Gly Ser
 275 280 285
 Gly Ser Gly Ala Ser Tyr Asn Asn Ile Leu Ser Lys Val Ile Ser Val
 290 295 300
 Asp Asp Gly Trp Val Leu Tyr Glu Gly Lys Tyr Arg Tyr Asn Ser Ser
 305 310 315 320
 Gly Gly Glu Tyr Leu Thr Ile Tyr Val Glu Ser Pro Asn Asn Ser Thr
 325 330 335
 Ala Ser Phe Tyr Ile Asp Asp Ile Arg Leu Ile Lys Ser Gly Asp Pro
 340 345 350
 Ile Ser Val Gln Lys Asp Leu Leu Pro Ile Lys Ser Val Tyr Glu Gly
 355 360 365
 Asp Phe Leu Val Gly Ser Ala Val Ser Ala Thr Asp Leu Glu Gly Glu
 370 375 380
 Arg Leu Glu Leu Leu Lys Leu His Tyr Asn Ser Ile Thr Ala Glu Asn
 385 390 395 400
 Ala Met Lys Pro Ser Tyr Leu Gln Pro Thr Lys Gly Asn Phe Thr Phe
 405 410 415
 Glu Ala Ala Asp Ser Ile Val Asn Lys Ala Leu Glu Glu Gly Met Lys
 420 425 430
 Val His Gly His Val Leu Val Trp His Gln Gln Thr Pro Glu Trp Met
 435 440 445
 Thr Thr Arg Glu Asp Gly Ser Pro Leu Gly Arg Glu Glu Ala Leu Glu
 450 455 460
 Asn Leu Lys Asn His Ile Glu Thr Val Met Lys His Phe Gly Asp Arg
 465 470 475 480
 Val Ile Ser Trp Asp Val Val Asn Glu Ala Ile Ile Asp Asn Pro Pro
 485 490 495
 Asn Pro Asp Asn Trp Glu Glu Ser Leu Arg Lys Ser Pro Trp Tyr Tyr
 500 505 510
 Ser Ile Gly Ser Asp Tyr Val Glu Gln Ala Phe Arg Ile Ala Arg Gln
 515 520 525

Val Leu Asp Glu Asn Gly Trp Asp Ile Lys Leu Tyr Tyr Asn Asp Tyr
 530 535 540
 Asn Glu Asp Asn Gln Arg Lys Ala Gln Ala Ile Tyr His Met Val Lys
 545 550 555
 Glu Leu Asn Glu Lys Tyr Ala Gln Glu His Pro Gly Lys Arg Leu Ile
 565 570 575
 Asp Gly Ile Gly Met Gln Gly His Tyr Ser Ile Arg Thr Asn Pro Asp
 580 585 590
 Asn Val Lys Met Ser Leu Glu Arg Phe Ile Ser Leu Gly Val Glu Val
 595 600 605
 Ser Ile Thr Glu Leu Asp Ile Gln Ala Gly Thr Asp Asn His Leu Thr
 610 615 620
 Glu Glu Gln Ser Lys Ala Gln Ala Tyr Leu Tyr Ala Lys Leu Phe Lys
 625 630 635
 Ile Phe Lys Glu Asn Ala Ser His Ile Ser Arg Val Thr Leu Trp Gly
 645 650 655
 Leu Asn Asp Ala Ala Ser Trp Arg Ala Ser Thr Ser Pro Leu Leu Phe
 660 665 670
 Asp Arg Asn Leu Gln Ala Lys Pro Ser Tyr Tyr Ala Val Ile Asp Pro
 675 680 685
 Asp Thr Phe Ile Glu Glu Asn Pro Thr Val Thr Glu Glu Ser Arg Lys
 690 695 700
 Ala Ile Ala Leu Tyr Gly Ile Pro Val Ile Asp Gly Ser Ile Asp Ser
 705 710 715
 Ile Trp Glu Ser Val Pro Tyr Ile Pro Ile Asp Arg Tyr Gln Met Ala
 725 730 735
 Trp Gln Gly Ala Ser Gly Thr Ala Lys Val Leu Trp Asp Glu Gly Asn
 740 745 750
 Leu Tyr Val Leu Val Gln Val Asn Asp Asp Gln Leu Asp Lys Ser Ser
 755 760 765
 Thr Asn Pro Trp Glu Gln Asp Ser Ile Glu Val Phe Val Asp Glu Asn
 770 775 780
 Asn Ala Lys Thr Ser Phe Tyr Gln Glu Asp Asp Gly Gln Tyr Arg Val
 785 790 795
 Asn Phe Asp Asn Glu Thr Ser Phe Asn Pro Pro Ser Ile Glu Asn Gly
 805 810 815
 Phe Met Ser Glu Thr Asn Val Ser Gly Thr Asn Tyr Val Val Glu Met
 820 825 830
 Lys Ile Pro Leu Arg Ser Ile Gln Leu Lys Asn Gly Ser Glu Ile Gly
 835 840 845
 Phe Asp Val Gln Ile Asn Asp Gly Lys Asn Gly Ala Arg Gln Ser Val
 850 855 860
 Ala Ala Trp Asn Asp Thr Thr Gly Thr Ala Tyr Met Asp Thr Ser Val
 865 870 875
 Phe Gly Thr Leu Thr Leu Thr Thr Leu Asp Asn Glu Asn Thr Pro
 885 890 895
 Gly Ser Gly Thr Thr Pro Gly Ser Gly Thr Thr Pro Gly Ser Gly Thr
 900 905 910
 Thr Pro Gly Ser Ser Thr Thr Pro Gly Ser Gly Thr Thr Pro Gly Ser
 915 920 925
 Gly Thr Thr Pro Gly Ser Gly Thr Thr Pro Gly Ser Gly Thr Thr Pro
 930 935 940
 Gly Ser Gly Thr Thr Pro Gly Ser Gly Thr Thr Pro Gly Ser Gly Thr
 945 950 955
 Thr Pro Gly Ser Gly Thr Thr Pro Gly Ser Gly Thr Thr Pro Gly Ser
 965 970 975
 Gly Thr Thr Pro Val Lys Gly Glu Asn Gly Thr Val Val Leu Gln Pro
 980 985 990
 Lys Val Glu Thr Lys Glu Lys Asp Gly Lys Val Val Glu Lys Val Ala
 995 1000 1005
 Thr Ile Ser Thr Asn Glu Val Glu Ala Ile Val Lys Glu Leu Ser Asn
 1010 1015 1020
 Glu Asn Lys Gln Val Val Val Ser Leu Gly Ser Leu Pro Lys Gly Val
 1025 1030 1035
 Ala Thr Lys Val Asp Val Pro Ala Thr Leu Phe Thr Gln Ala Ala Asn
 1045 1050 1055
 Lys Gln Ala Glu Ala Thr Ile Val Ser Ala Ser Glu Gln Ala Thr Tyr
 1060 1065 1070
 Lys Leu Pro Val Lys Glu Val Gln Ala Ser Leu Ala Thr Ile Ala Arg

1075	1080	1085
Ser Leu Gly Ala Thr Ile Glu Gln Val Ser Ile Ser Ile Glu Met Lys		
1090	1095	1100
Val Asn Asp Ala Pro Ser Leu Arg Val Lys Pro Leu Ser Asp Ala Val		
1105	1110	1115
Glu Phe His Val Val Ala Lys Ala Asn Gly Lys Glu Arg Val Ile Asp		
1125	1130	1135
Arg Phe Thr Gln Tyr Val Glu Arg Glu Ile Ala Leu Lys Gln Ser Val		
1140	1145	1150
Asn Ala Ser Arg Ala Ile Ala Val Arg Val Asn Asp Asp Gly Ser Leu		
1155	1160	1165
Thr Pro Val Pro Thr Thr Phe Val Gly Asn Lys Ala Val Ile Lys Ser		
1170	1175	1180
Leu Thr Asn Ser Thr Tyr Val Val Val Glu Gly Thr His Thr Phe Ser		
1185	1190	1195
Asp Ile Gln Pro His Trp Ala Lys Gly Tyr Ile Glu Thr Leu Ala Ala		
1205	1210	1215
Lys Gln Leu Val Lys Gly Met Thr Asp Thr Thr Tyr Arg Pro Asn Asp		
1220	1225	1230
Arg Met Thr Arg Ala Gln Phe Ala Val Leu Leu Val Arg Ala Leu Gly		
1235	1240	1245
Leu Pro Ser Glu Thr Tyr Asp Gly Arg Phe Ala Asp Val Lys Gly Thr		
1250	1255	1260
Glu Trp Phe Asn Lys Asn Gly Glu Leu Ala Ala Val Lys Phe Gly		
1265	1270	1275
Ile Ile Gln Gly Lys Thr Ala Tyr Met Phe Ala Pro Asn Glu Pro Ile		
1285	1290	1295
Thr Arg Ala Gln Ala Ala Val Met Ile Glu Arg Ala Leu Lys Leu Ser		
1300	1305	1310
Ile Val Gly Tyr Asp Glu Ala Thr Ser Asp Lys Thr Lys Lys Val Thr		
1315	1320	1325
Asp Phe Arg Asp Ala Lys Gln Leu Pro Thr Trp Ala Lys Gln Ala Ile		
1330	1335	1340
Glu Ala Val Tyr Gln Ala Gly Ile Met Gln Gly Arg Asp Ser Gly Asn		
1345	1350	1355
Phe Asp Pro Thr Ser His Val Thr Arg Ala Glu Met Ala Lys Val Leu		
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1380	1385	

<210> 285
 <211> 1569
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<400> 285					
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aatgccatga	agcagtcttc	tgtaatgagg	cctgacggat	ccatggattt	cactcagggtc
agaagattca	tcgaggaggc	cgaacgtgtc	ggaatgacag	tgtacggcca	tacattggca
tggtattcac	agcagcagaa	cgcctatctt	aacgggtctga	tcaagggcaa	gaagaccgag
gtcagagccag	gccaggagtc	agaggtcggt	cttctccaga	cagatttcaa	tgacggaaat
gtcacattca	acggatgggg	aaacaattct	tcaaggactg	tcgagaatgg	tgcatataag
cttacaaacc	cttctgtagt	aaacagttgg	gaggcccgag	tcgcatatga	tttttcagag
gccttcgaga	tggaacaagac	atataagctc	aagttcagga	tcaagggctc	ggctgcagga
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gaattcggcg	gtacggctcc	tttgagactc	ttcatcaatg	actacaacct	cgaatctgac
tgggatgaca	acaagaagct	caagagcctt	atccattgga	tcggtgtctg	ggagtctgac
ggagtgacaa	agatcgacgg	aatcgggtacc	cagatgcacg	tttcgtatta	cgagaatcct
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					900
					960
					1020
					1080
					1140
					1200

gatattcagg	caagcaagga	gaaacattat	gtgcagatgc	ttcagcttat	ggcaaataca	1260
ggaaagctcg	tgaagatctc	cgagcttgat	atgggctatg	tagaccgcaa	cgaaataact	1320
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atcgtgcgca	agtactttga	gatcgtgcct	cctgcacagc	agtatggcat	cacgcagtgg	1440
tgcattgacgg	atgctcccgg	agctatcggc	acaggctgga	gaggcggtga	gcctgtgggc	1500
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<210> 286

<211> 522

<212> PRT

<213> Unknown

<220>

<223> obtained from an environmental sample.

<400> 286

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			20					25					30		
Asn	Leu	Asp	Glu	Met	Thr	Ala	Gly	Asn	Ala	Met	Lys	Gln	Ser	Ser	Val
		35					40					45			
Met	Arg	Pro	Asp	Gly	Ser	Met	Asp	Phe	Thr	Gln	Val	Arg	Arg	Phe	Ile
	50					55					60				
Glu	Glu	Ala	Glu	Arg	Val	Gly	Met	Thr	Val	Tyr	Gly	His	Thr	Leu	Ala
65					70				75					80	
Trp	His	Ser	Gln	Gln	Gln	Asn	Ala	Tyr	Leu	Asn	Gly	Leu	Ile	Lys	Gly
			85						90					95	
Lys	Lys	Thr	Glu	Val	Glu	Pro	Gly	Gln	Glu	Ser	Glu	Val	Val	Leu	Leu
			100					105					110		
Gln	Thr	Asp	Phe	Asn	Asp	Gly	Asn	Val	Thr	Phe	Asn	Gly	Trp	Gly	Asn
		115					120					125			
Asn	Ser	Ser	Arg	Thr	Val	Glu	Asn	Gly	Ala	Leu	Lys	Leu	Thr	Asn	Pro
		130				135					140				
Ser	Val	Val	Asn	Ser	Trp	Glu	Ala	Gln	Phe	Ala	Tyr	Asp	Phe	Ser	Glu
145					150					155					160
Ala	Phe	Glu	Met	Asp	Lys	Thr	Tyr	Lys	Leu	Lys	Phe	Arg	Ile	Lys	Gly
			165					170						175	
Ser	Ala	Ala	Gly	Lys	Ile	Ala	Ala	Gly	Phe	Gln	Ile	Thr	Asp	Gly	Tyr
			180					185					190		
Leu	Ser	Ala	Gly	Glu	Phe	Gly	Thr	Val	Glu	Phe	Asn	Thr	Gln	Trp	Lys
		195					200					205			
Asp	Val	Glu	Leu	Ser	Cys	Val	Cys	Ser	Ala	Glu	Gly	Gly	Thr	Arg	Leu
	210					215					220				
Ile	Phe	Ser	Phe	Gly	Glu	Phe	Ala	Gly	Asp	Ile	Tyr	Ile	Asp	Asp	Phe
225					230					235					240
Cys	Phe	Ser	Val	Glu	Gly	Ala	Gly	Tyr	Ile	Tyr	Glu	Asp	Leu	Thr	Pro
			245						250					255	
Ala	Glu	Lys	Lys	Glu	Arg	Leu	Thr	Glu	Ala	Met	Asp	Arg	Trp	Ile	Lys
			260					265					270		
Gly	Met	Met	Glu	Val	Thr	Ala	Thr	Arg	Val	Ser	Ala	Trp	Asp	Ala	Val
		275					280					285			
Asn	Glu	Ala	Ile	Ser	Gly	Arg	Asp	Thr	Asn	Gly	Asp	Gly	Phe	Tyr	Glu
	290					295					300				
Leu	Glu	Ser	Ala	Gln	Trp	Gly	Ser	Ser	Asn	Asn	Phe	Tyr	Trp	Gln	Asp
305					310					315					320
Tyr	Leu	Gly	Ser	Gly	Asp	Tyr	Val	Arg	Ile	Val	Ile	Ala	Lys	Ala	Arg
			325						330					335	
Lys	Tyr	Tyr	Glu	Glu	Phe	Gly	Gly	Thr	Ala	Pro	Leu	Arg	Leu	Phe	Ile
			340					345					350		
Asn	Asp	Tyr	Asn	Leu	Glu	Ser	Asp	Trp	Asp	Asp	Asn	Lys	Lys	Leu	Lys
		355					360					365			
Ser	Leu	Ile	His	Trp	Ile	Gly	Val	Trp	Glu	Ser	Asp	Gly	Val	Thr	Lys
	370					375					380				
Ile	Asp	Gly	Ile	Gly	Thr	Gln	Met	His	Val	Ser	Tyr	Tyr	Glu	Asn	Pro
385					390					395					400
Asp	Ile	Gln	Ala	Ser	Lys	Glu	Lys	His	Tyr	Val	Gln	Met	Leu	Gln	Leu
			405						410					415	

Met Ala Asn Thr Gly Lys Leu Val Lys Ile Ser Glu Leu Asp Met Gly
 420 425 430
 Tyr Val Asp Arg Asn Gly Asn Thr Val Gly Thr Ala Asp Met Thr Asp
 435 440 445
 Gln Gln His Arg Ala Met Ala Asp Tyr Tyr Asp Phe Ile Val Arg Lys
 450 455 460
 Tyr Phe Glu Ile Val Pro Pro Ala Gln Gln Tyr Gly Ile Thr Gln Trp
 465 470 475 480
 Cys Met Thr Asp Ala Pro Gly Ala Ile Gly Thr Gly Trp Arg Gly Gly
 485 490 495
 Glu Pro Val Gly Leu Trp Asp Gln Asn Tyr Asn Arg Lys Tyr Ala Tyr
 500 505 510
 Ala Gly Phe Ala Asn Gly Leu Arg Ala Lys
 515 520

<210> 287
 <211> 1695
 <212> DNA
 <213> unknown

<220>
 <223> obtained from an environmental sample.

<400> 287
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 tcagggttatt gcgctaactg caccattggc aacaacggca gccaaagccat tacttcctgg 180
 acgggttgccg tgaaccttaa cggcacgacg atcaataatc tttggaacgg taatttgagt 240
 ggggtttacgg ttacccccgt ggcctacaat gcgaatgtgg cgccgggtgc taataccagc 300
 tttggtttct gtgctaattg cagcgcaacc ccacggttg cgacgtttga agttcaaggc 360
 ggcgggtggcg cagccagtag ttccagcagt tctgctatct caagcagctc cagcagttcg 420
 gttgccggcg gcagcaacag cgtcaccgta cgcagtagcg gcgtaaccgg agacgaaagc 480
 gtgagcctgg aaatcgggtg tcagaccatc gagacctgga ccctgagcgt cggtagtctc 540
 gactacaccg tacagaccaa cgctaccggt gagttgcgtg ttgcgtttac caatgatgaa 600
 ggtgaccgcg atgtcgaagt ggattacatc atggtcaacg gcgtgacctc tcaggccgaa 660
 gatcaggaag ataacaccgg cgcgtgggac ggagagtgtg gtgcgggttc ctctcgcag 720
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 tccagctcca gcaacacttc gagctcgagc agcagctcta accctaaccg tggcaatccg 840
 aatttccccg atttcttcgt aggtaacatc accaccagcg gctcagttcg ctctgacttc 900
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 ggtatttcctg taaaagcgca cactctggtg tggggcagtc agcaaccggg ttggattggc 1080
 ggcttgagtg ccgctgagca gcgcgcggaa attgaagagt ggattcgcga ttactgcgca 1140
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 gcaaactatg cggccaatgc atttggaagc gattggatca ctgaatcctt ccgtttggca 1260
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 accgatgccca tcattcagat gattcgccca gccgtgaact ccggttatgt cgatgcactg 1380
 ggtcttcaag cgcacagcct gtattcccca caagtctgga ccgctcagca aatccagagc 1440
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 gcaacgaatg atcagactca gttacagtac atgcagatgc acttcccgat cttctacaac 1560
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<210> 288
 <211> 564
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<221> SIGNAL
 <222> (1)...(23)

<400> 288
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 1 5 10 15
 Thr Gly Gln Ala Ala His Ala Leu Thr Ser Gly Ser Gly Glu Ala Thr
 Page 210

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Leu	Asp	Val	Asn	Asn	Ser	Trp	Gly	Ser	Gly	Tyr	Cys	Ala	Asn	Val	Thr		
		35					40					45					
Ile	Ala	Asn	Asn	Gly	Ser	Gln	Ala	Ile	Thr	Ser	Trp	Thr	Val	Gly	Leu		
	50					55					60						
Asn	Leu	Asn	Gly	Thr	Thr	Ile	Asn	Asn	Leu	Trp	Asn	Gly	Asn	Leu	Ser		
65					70					75					80		
Gly	Val	Thr	Val	Thr	Pro	Val	Ala	Tyr	Asn	Ala	Asn	Val	Ala	Pro	Gly		
				85					90					95			
Ala	Asn	Thr	Ser	Phe	Gly	Phe	Cys	Ala	Asn	Gly	Ser	Ala	Thr	Pro	Thr		
			100					105					110				
Leu	Ala	Thr	Phe	Glu	Val	Gln	Gly	Gly	Gly	Gly	Ala	Ala	Ser	Ser	Ser		
		115					120					125					
Ser	Ser	Ser	Ala	Ile	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Val	Ala	Gly	Gly		
	130					135						140					
Ser	Asn	Ser	Val	Thr	Val	Arg	Met	Ser	Gly	Val	Thr	Gly	Asp	Glu	Ser		
145					150					155				160			
Val	Ser	Leu	Glu	Ile	Gly	Gly	Gln	Thr	Ile	Glu	Thr	Trp	Thr	Leu	Ser		
				165					170					175			
Val	Gly	Met	Leu	Asp	Tyr	Thr	Val	Gln	Thr	Asn	Ala	Thr	Gly	Glu	Leu		
			180					185					190				
Arg	Val	Ala	Phe	Thr	Asn	Asp	Glu	Gly	Asp	Arg	Asp	Val	Glu	Val	Asp		
		195					200					205					
Tyr	Ile	Met	Val	Asn	Gly	Val	Thr	Tyr	Gln	Ala	Glu	Asp	Gln	Glu	Asp		
	210					215					220						
Asn	Thr	Gly	Ala	Trp	Asp	Gly	Glu	Cys	Gly	Ala	Gly	Ser	Phe	Ser	Gln		
225					230					235					240		
Met	Leu	His	Cys	Asn	Gly	Ser	Ile	Gly	Phe	Gly	Asn	Pro	Phe	Asp	Gly		
				245					250					255			
Ser	Asn	Ser	Ser	Ser	Ser	Ser	Ser	Asn	Thr	Ser	Ser	Ser	Ser	Ser	Ser		
			260					265					270				
Ser	Asn	Pro	Asn	Pro	Gly	Asn	Pro	Asn	Phe	Pro	Asp	Phe	Phe	Val	Gly		
		275					280					285					
Asn	Ile	Thr	Thr	Ser	Gly	Ser	Val	Arg	Ser	Asp	Phe	Met	Gln	Tyr	Trp		
	290					295					300						
Asp	Gln	Ile	Thr	Pro	Glu	Asn	Glu	Gly	Lys	Trp	Gly	Ser	Val	Glu	Gly		
305					310					315				320			
Thr	Arg	Asp	Gln	Tyr	Asn	Trp	Gly	Pro	Leu	Asp	Ala	Ile	Tyr	Asn	Phe		
				325					330					335			
Ala	Arg	Ala	Asn	Gly	Ile	Pro	Val	Lys	Ala	His	Thr	Leu	Val	Trp	Gly		
			340					345					350				
Ser	Gln	Gln	Pro	Gly	Trp	Ile	Gly	Gly	Leu	Ser	Ala	Ala	Glu	Gln	Arg		
		355					360					365					
Ala	Glu	Ile	Glu	Glu	Trp	Ile	Arg	Asp	Tyr	Cys	Ala	Arg	Tyr	Pro	Asp		
	370					375					380						
Thr	Ala	Met	Ile	Asp	Val	Val	Asn	Glu	Ala	Leu	Pro	Ser	His	Ala	Pro		
385					390					395					400		
Ala	Asn	Tyr	Ala	Ala	Asn	Ala	Phe	Gly	Ser	Asp	Trp	Ile	Thr	Glu	Ser		
				405					410					415			
Phe	Arg	Leu	Ala	Arg	Gln	Tyr	Cys	Pro	Asp	Ala	Val	Leu	Ile	Tyr	Asn		
			420					425					430				
Asp	Tyr	Asn	Phe	Met	Thr	Trp	Asp	Thr	Asp	Ala	Ile	Ile	Gln	Met	Ile		
		435					440					445					
Arg	Pro	Ala	Val	Asn	Ser	Gly	Tyr	Val	Asp	Ala	Leu	Gly	Leu	Gln	Ala		
		450				455					460						
His	Ser	Leu	Tyr	Ser	Pro	Gln	Val	Trp	Thr	Ala	Gln	Gln	Ile	Gln	Ser		
465					470					475					480		
Lys	Leu	Asp	Gln	Ile	Ser	Glu	Leu	Gly	Leu	Pro	Leu	Tyr	Ile	Ser	Glu		
				485					490					495			
Tyr	Asp	Ile	Glu	Ala	Thr	Asn	Asp	Gln	Thr	Gln	Leu	Gln	Tyr	Met	Gln		
			500					505					510				
Met	His	Phe	Pro	Ile	Phe	Tyr	Asn	His	Pro	Asn	Val	Ala	Gly	Ile	Thr		
		515					520					525					
Leu	Trp	Gly	Tyr	Val	Val	Gly	Ala	Thr	Trp	Arg	Asp	Gly	Thr	Gly	Leu		
	530					535					540						
Ile	Gln	Ser	Asn	Gly	Gln	Gln	Arg	Pro	Ala	Met	Gln	Trp	Leu	Met	Glu		
545					550					555					560		
Tyr	Leu	Asn	Arg														

<210> 289
 <211> 2796
 <212> DNA
 <213> unknown

<220>
 <223> Obtained from an environmental sample.

<400> 289
 atgaagttca ctttgacacc gctgctgtgc gggttcgcct tattgttggg ttgcgcggtg 60
 caggcaaccc cagccgcttc gttaaagcag gcctatcagc cgtttttcca tatcggcacc 120
 gcagtcagtc tggcgcaatt acaaccatcc aaagaacatg aacgcgcttt aattgctcag 180
 cactttaaca gtctgaccgc cgaaaacctg atgaaatggg aggaaattca acccacggaa 240
 ggcaactttg attttaaagc ggccgatcag ttggttgctg ttgccgaaca acatcaaattg 300
 tggatgatcg gccataccat tctgtggcat gaacaaaccc cagactgggt gtttcagggg 360
 ctggatggca aacccgccag caagcagctg ctactggccc gcttgaccaa acatatccaa 420
 acggctcgtt gccgttacca gggccgggtc aatggctggg atgtggtgaa tgaagcgctc 480
 aatgaagatg gcagcctgcg cgataccccc tggcggcgca ttttgggtga tgattacatt 540
 gccaccactt ttgcgttggg gcatcaggtc gaccctaaag ccaaactcta ttacaacgat 600
 tacaacctgt ttaaaccgga aaaacgcgcc ggggtgctgc ggattatcca acaactgcag 660
 caaaaaaatg tgcctattca tgccattggg ttgatcaac gctttttgctg ccaccggcct ggacgtgatg 720
 gcattcaaaag acgttgaaga ttcgatcaac gctttttgctg ccaccggcct ggacgtgatg 780
 ctaaccgaac tggagatttc agtattggcg tatccatccg gcatgacgca ggggtgccgat 840
 atcagtcagc atcaggaatt gcaggaacaa ctaaaccctt atcgcgatgg ttgcccacaa 900
 gccgtcgaac aagcctggca acaacggtat ctcgatttgt tttcgctgtt attacgccag 960
 cagcaaaaac tgcctcgcgt gaccttcttg ggcttagatg atggccaaag ctggcgtaat 1020
 aatttcccga ttgcgcggtcg caccgattac ccactgctgt ttgatcgaa gctgcaagcc 1080
 aaaccgctgt taagcgcact gacggcatta gccgcagacc agactaaagc caagcccaaa 1140
 atgaatcagc tgggctttgc gccgacttcg accaaactgt tgattgtgcc gggctcggca 1200
 tcagtgcctt ttcattgttt ggataccgag accggccaaa cgggtgctgca aggccaaaagt 1260
 tcggcgccca ggttttgccc tgaatcgggg gaatgggtca gtgctgccga tttttctgcg 1320
 gtgataactc ccggcaccta tcagatcaac atctcaggaa gcccgccaca aactgtcaag 1380
 atccaggccg aaccttatgc cgcgctgcat gatgcggcaa tcaaagccta ttattttaac 1440
 cgcgctcgc tcacactgga gccaaagttt gccggacctt gggcacgcgc agcggggcat 1500
 ccggatacca aagtaagggt gcatgcttct gctgcatcgg ccagcaggcc agaaggttat 1560
 gagctcagcg ctgccaaagg ctggtatgac gccggtgact acaacaaata cgtggtgaat 1620
 tccggcatta ccagttacac cctgttgca gcttggcagg attttcctga gttttatcaa 1680
 agccggacct ggaatattcc ggagtccggc aacgcggtac cggacattct cgacgaaacc 1740
 ttatggaatc tgcagtgggt cagcgccatg caagacccaa acgacggggg cgtctatcac 1800
 aagctgactg aactgaattt ttcggcaacc caaatgccgg accaagtga agcagagcgt 1860
 tatgtggtgt aaaaaaccac cgccgcggca ctgaatttcg ctgcggtgtt ggccaaagcc 1920
 agtacgggtt ttgccaaatt tgacgcccag ttgcccggcc tgcgcaaca ataccgtcag 1980
 caagcactgc tcgctggca atgggcgcaa aaaaatccgc agcaaattcta tcaacaaccc 2040
 aaagatgtcc acactggcgc ttatggtgac aaacaactgg ctgatgaatg ggcctgggct 2100
 ggcgcccgcg tgtatttatt gaccggcgag caaagttatc tgcagccact gttggcgctg 2160
 gacacgcaa tcagtgcagc atcctgggcc agtgtcagcg ctttggggta tttttcttg 2220
 gcttcggcga aacagcttga gcccgcacta cggcaacagg tacaacagaa aatccaacaa 2280
 gccgcccgcg aaatcctgca ggaacatcaa acatccgcct atcaggtggc gatgaccaa 2340
 aacgattttg tctggggcag taatgcggtg gcaatgaata aagcgatgtt gttataccag 2400
 gcgtggaaaa tagcgccaaa accggagctg ctacaggcga tgcaaggtct ggttgattac 2460
 gttttggggc gcaacccgtt gcagcagtct tatgtcacag ggtttggcga gcaaagcccc 2520
 cagcagatcc accaccgacc ttcggccgcc gatgccatca aagcggcggg accaggttgg 2580
 ttagtcggtg gtgcacagcc gggtaagcag gataaatgca cttatgccgg cgctttaccc 2640
 gctgtcggcg ctttaccgcg tgccagcacc ttaccagcca ccacttatct tgatgactgg 2700
 tgcagttacg ccaccaacga agtggcgatt aactggaatg caccttgggt gtatgtgctg 2760
 gcatggcacc tttcgcaaaa caccaagaca ccataa 2796

<210> 290
 <211> 931
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<221> SIGNAL
 <222> (1)...(22)

<400> 290
 Met Lys Phe Thr Leu Thr Pro Leu Leu Cys Gly Phe Ala Leu Leu Leu
 1 5 10 15
 Gly Cys Ala Val Gln Ala Thr Pro Ala Ser Leu Lys Gln Ala Tyr
 20 25 30
 Gln Pro Phe Phe His Ile Gly Thr Ala Val Ser Leu Ala Gln Leu Gln
 35 40 45
 Pro Ser Lys Glu His Glu Arg Ala Leu Ile Ala Gln His Phe Asn Ser
 50 55 60
 Leu Thr Ala Glu Asn Leu Met Lys Trp Glu Glu Ile Gln Pro Thr Glu
 65 70 75 80
 Gly Asn Phe Asp Phe Lys Ala Ala Asp Gln Leu Val Ala Phe Ala Glu
 85 90 95
 Gln His Gln Met Trp Met Ile Gly His Thr Ile Leu Trp His Glu Gln
 100 105 110
 Thr Pro Asp Trp Val Phe Gln Gly Leu Asp Gly Lys Pro Ala Ser Lys
 115 120 125
 Gln Leu Leu Ala Arg Leu Thr Lys His Ile Gln Thr Val Val Gly
 130 135 140
 Arg Tyr Gln Gly Arg Val Asn Gly Trp Asp Val Val Asn Glu Ala Leu
 145 150 155 160
 Asn Glu Asp Gly Ser Leu Arg Asp Thr Pro Trp Arg Arg Ile Leu Gly
 165 170 175
 Asp Asp Tyr Ile Ala Thr Thr Phe Ala Leu Val His Gln Val Asp Pro
 180 185 190
 Lys Ala Lys Leu Tyr Tyr Asn Asp Tyr Asn Leu Phe Lys Pro Glu Lys
 195 200 205
 Arg Ala Gly Val Leu Arg Ile Ile Gln Gln Leu Gln Lys Asn Val
 210 215 220
 Pro Ile His Ala Ile Gly Glu Gln Ala His Tyr Gly Leu Asp Ser Pro
 225 230 235 240
 Ala Phe Lys Asp Val Glu Asp Ser Ile Asn Ala Phe Ala Ala Thr Gly
 245 250 255
 Leu Asp Val Met Leu Thr Glu Leu Glu Ile Ser Val Leu Pro Tyr Pro
 260 265 270
 Ser Gly Met Thr Gln Gly Ala Asp Ile Ser Gln His Gln Glu Leu Gln
 275 280 285
 Glu Gln Leu Asn Pro Tyr Arg Asp Gly Leu Pro Lys Ala Val Glu Gln
 290 295 300
 Ala Trp Gln Gln Arg Tyr Leu Asp Leu Phe Ser Leu Leu Leu Arg Gln
 305 310 315 320
 Gln Gln Lys Leu His Arg Val Thr Phe Trp Gly Leu Asp Asp Gly Gln
 325 330 335
 Ser Trp Arg Asn Asn Phe Pro Met Arg Gly Arg Thr Asp Tyr Pro Leu
 340 345 350
 Leu Phe Asp Arg Lys Leu Gln Ala Lys Pro Leu Leu Ser Ala Leu Thr
 355 360 365
 Ala Leu Ala Ala Asp Gln Thr Lys Ala Lys Pro Lys Met Asn Gln Leu
 370 375 380
 Gly Phe Ala Pro Thr Ser Thr Lys Leu Leu Ile Val Pro Gly Arg Gln
 385 390 395 400
 Ser Val Pro Phe His Val Leu Asp Thr Glu Thr Gly Gln Thr Val Leu
 405 410 415
 Gln Gly Gln Ser Ala Ala Arg Phe Trp Pro Glu Ser Gly Glu Trp
 420 425 430
 Val Ser Ala Ala Asp Phe Ser Ala Val Ile Thr Pro Gly Thr Tyr Gln
 435 440 445
 Ile Asn Ile Ser Gly Thr Pro Gln Thr Val Lys Ile Gln Ala Glu
 450 455 460
 Pro Tyr Ala Ala Leu His Asp Ala Ala Ile Lys Ala Tyr Tyr Phe Asn
 465 470 475 480
 Arg Ala Ser Leu Thr Leu Glu Pro Lys Phe Ala Gly Pro Trp Ala Arg
 485 490 495
 Ala Ala Gly His Pro Asp Thr Lys Val Arg Val His Ala Ser Ala Ala
 500 505 510
 Ser Ala Ser Arg Pro Glu Gly Tyr Glu Leu Ser Ala Ala Lys Gly Trp
 515 520 525
 Tyr Asp Ala Gly Asp Tyr Asn Lys Tyr Val Val Asn Ser Gly Ile Thr
 530 535 540

Ser Tyr Thr Leu Leu Gln Ala Trp Gln Asp Phe Pro Glu Phe Tyr Gln
 545 550 555 560
 Ser Arg Thr Trp Asn Ile Pro Glu Ser Gly Asn Ala Val Pro Asp Ile
 565 570 575
 Leu Asp Glu Thr Leu Trp Asn Leu Gln Trp Phe Ser Ala Met Gln Asp
 580 585 590
 Pro Asn Asp Gly Gly Val Tyr His Lys Leu Thr Glu Leu Asn Phe Ser
 595 600 605
 Ala Thr Gln Met Pro Asp Gln Val Thr Ala Glu Arg Tyr Val Val Gln
 610 615 620
 Lys Thr Thr Ala Ala Ala Leu Asn Phe Ala Ala Val Leu Ala Lys Ala
 625 630 635 640
 Ser Thr Val Phe Ala Lys Phe Asp Ala Gln Leu Pro Gly Leu Ser Gln
 645 650 655
 Gln Tyr Arg Gln Gln Ala Leu Leu Ala Trp Gln Trp Ala Gln Lys Asn
 660 665 670
 Pro Gln Gln Ile Tyr Gln Gln Pro Lys Asp Val His Thr Gly Ala Tyr
 675 680 685
 Gly Asp Lys Gln Leu Ala Asp Glu Trp Ala Trp Ala Gly Ala Glu Leu
 690 695 700
 Tyr Leu Leu Thr Gly Glu Gln Ser Tyr Leu Gln Pro Leu Leu Ala Leu
 705 710 715 720
 Asp Thr Pro Ile Ser Ala Ala Ser Trp Ala Ser Val Ser Ala Leu Gly
 725 730 735
 Tyr Phe Ser Leu Ala Ser Ala Lys Gln Leu Glu Pro Ala Leu Arg Gln
 740 745 750
 Gln Val Gln Gln Lys Ile Gln Gln Ala Ala Ala Gln Ile Leu Gln Glu
 755 760 765
 His Gln Thr Ser Ala Tyr Gln Val Ala Met Thr Lys Asn Asp Phe Val
 770 775 780
 Trp Gly Ser Asn Ala Val Ala Met Asn Lys Ala Met Leu Leu Tyr Gln
 785 790 795 800
 Ala Trp Lys Ile Ala Pro Lys Pro Glu Leu Gln Ala Met Gln Gly
 805 810 815
 Leu Val Asp Tyr Val Leu Gly Arg Asn Pro Leu Gln Gln Ser Tyr Val
 820 825 830
 Thr Gly Phe Gly Glu Gln Ser Pro Gln Gln Ile His His Arg Pro Ser
 835 840 845
 Ala Ala Asp Ala Ile Lys Ala Pro Val Pro Gly Trp Leu Val Gly Gly
 850 855 860
 Ala Gln Pro Gly Lys Gln Asp Lys Cys Thr Tyr Ala Gly Ala Leu Pro
 865 870 875 880
 Ala Val Gly Ala Leu Pro Ala Ala Ser Thr Leu Pro Ala Thr Thr Tyr
 885 890 895
 Leu Asp Asp Trp Cys Ser Tyr Ala Thr Asn Glu Val Ala Ile Asn Trp
 900 905 910
 Asn Ala Pro Leu Val Tyr Val Leu Ala Trp His Leu Ser Gln Asn Thr
 915 920 925
 Lys Thr Pro
 930

<210> 291
 <211> 1230
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<400> 291
 atggtcaaag aaagaagttt tcttcatcat tcattcaata ggggcgaaaa tggacaggac 60
 agtctgatgt ggaaaaaaga ggcggatgat cgaatctcag agcatagaca aagagatctt 120
 gtgatcaacg taacaaacgg tgaaaaaaag ccaatagcag gtatagaggt tgaaataaag 180
 caaatcagac atgaattcgc ctttggttca gcgatgaatg atcaagtgtt atttaataca 240
 caatatgctg attttttcgt gaagtatttt aattgggctg tttttgaaaa tgaggcaaaa 300
 tggatatgca atgagccaca aagagggaga atcacctacg aaaaagcaga tgcgatgctg 360
 aattttgcag atcgacatca gcttccagtg agagggcacg ctttgttttg ggaggttagag 420
 gatgcgaatc caagctggct aaggtcactg ccaaataatg aagtatatga agccatgaaa 480
 aaccggcctt agcatgcggg caatcacttt aagggaaggt tccgtcattg ggatgtaaac 540

aattgaaatga	tgcattgggttc	atTTTTTTTaaa	gatcgcttttg	ggaaaaaatat	ttggaagtgg	600
atgtatgaag	aaacgaaaaa	aattgaccct	caagcactat	tgtttgtgaa	tgattataat	660
gtgatctcat	atgggtgaaca	ccatgcctat	aaagcgcata	tcaatgaact	gcgtcagtta	720
ggcgcaccta	ttgaggcgat	tggggttcaa	ggccattttg	aagaacgggt	cgatccagtc	780
attgtcaaaag	agagactcga	tgtgcttgct	gagctagggtc	ttccaatatg	ggtcacagag	840
tacgattcgg	ttcacccctga	ccctaatacga	agagcgggata	acctggaagc	tttatatcgc	900
gtcgcatttta	gtcatccagc	cgtaaaagga	gtgctgatgt	ggggattttg	ggcaggtgcc	960
cattggagag	gggaaaaatgc	agccatcgtg	aattatgatt	ggcttttaaa	tgaagcagga	1020
agacgttatg	aaaagcttct	aaatgagtg	acgacccaaa	gaattgaaaa	aacagatgct	1080
aatggccatg	tgagatgtcc	agcatttcac	ggaacatatg	aggttcgaat	cggtaaagaa	1140
agtaaaatgt	tgaacagca	gacgattgaa	cttgattcaa	atgaacaaac	accgtttcaa	1200
ctagacgtga	tcctgcctca	agaaggatag				1230

<210> 292

<211> 409

<212> PRT

<213> Unknown

<220>

<223> obtained from an environmental sample.

<400> 292

Met	Val	Lys	Glu	Arg	Ser	Phe	Leu	His	His	Ser	Phe	Asn	Arg	Gly	Glu
1				5					10					15	
Asn	Gly	Gln	Asp	Ser	Leu	Met	Trp	Lys	Lys	Glu	Ala	Asp	Asp	Arg	Ile
			20					25					30		
Ser	Glu	His	Arg	Gln	Arg	Asp	Leu	Val	Ile	Asn	Val	Thr	Asn	Gly	Glu
		35					40					45			
Lys	Lys	Pro	Ile	Ala	Gly	Ile	Glu	Val	Glu	Ile	Lys	Gln	Ile	Arg	His
	50					55					60				
Glu	Phe	Ala	Phe	Gly	Ser	Ala	Met	Asn	Asp	Gln	Val	Leu	Phe	Asn	Gln
65					70					75					80
Gln	Tyr	Ala	Asp	Phe	Phe	Val	Lys	Tyr	Phe	Asn	Trp	Ala	Val	Phe	Glu
			85						90					95	
Asn	Glu	Ala	Lys	Trp	Tyr	Ala	Asn	Glu	Pro	Gln	Arg	Gly	Arg	Ile	Thr
			100					105					110		
Tyr	Glu	Lys	Ala	Asp	Ala	Met	Leu	Asn	Phe	Ala	Asp	Arg	His	Gln	Leu
		115					120					125			
Pro	Val	Arg	Gly	His	Ala	Leu	Phe	Trp	Glu	Val	Glu	Asp	Ala	Asn	Pro
		130				135					140				
Ser	Trp	Leu	Arg	Ser	Leu	Pro	Asn	His	Glu	Val	Tyr	Glu	Ala	Met	Lys
				150						155					160
Asn	Arg	Leu	Glu	His	Ala	Gly	Asn	His	Phe	Lys	Gly	Arg	Phe	Arg	His
				165					170					175	
Trp	Asp	Val	Asn	Asn	Glu	Met	Met	His	Gly	Ser	Phe	Phe	Lys	Asp	Arg
			180					185					190		
Phe	Gly	Lys	Asn	Ile	Trp	Lys	Trp	Met	Tyr	Glu	Glu	Thr	Lys	Lys	Ile
		195					200					205			
Asp	Pro	Gln	Ala	Leu	Leu	Phe	Val	Asn	Asp	Tyr	Asn	Val	Ile	Ser	Tyr
		210				215					220				
Gly	Glu	His	His	Ala	Tyr	Lys	Ala	His	Ile	Asn	Glu	Leu	Arg	Gln	Leu
					230					235					240
Gly	Ala	Pro	Ile	Glu	Ala	Ile	Gly	Val	Gln	Gly	His	Phe	Glu	Glu	Arg
			245						250					255	
Val	Asp	Pro	Val	Ile	Val	Lys	Glu	Arg	Leu	Asp	Val	Leu	Ala	Glu	Leu
			260					265					270		
Gly	Leu	Pro	Ile	Trp	Val	Thr	Glu	Tyr	Asp	Ser	Val	His	Pro	Asp	Pro
		275					280					285			
Asn	Arg	Arg	Ala	Asp	Asn	Leu	Glu	Ala	Leu	Tyr	Arg	Val	Ala	Phe	Ser
		290				295					300				
His	Pro	Ala	Val	Lys	Gly	Val	Leu	Met	Trp	Gly	Phe	Trp	Ala	Gly	Ala
					310					315					320
His	Trp	Arg	Gly	Glu	Asn	Ala	Ala	Ile	Val	Asn	Tyr	Asp	Trp	Ser	Leu
			325						330					335	
Asn	Glu	Ala	Gly	Arg	Arg	Tyr	Glu	Lys	Leu	Leu	Asn	Glu	Trp	Thr	Thr
			340					345					350		
Gln	Arg	Ile	Glu	Lys	Thr	Asp	Ala	Asn	Gly	His	Val	Arg	Cys	Pro	Ala
		355					360					365			
Phe	His	Gly	Thr	Tyr	Glu	Val	Arg	Ile	Gly	Lys	Glu	Ser	Lys	Met	Leu

370 380
 Lys Gln Gln Thr Ile Glu Leu Asp Ser Asn Glu Gln Thr Pro Phe Gln
 385 390 395 400
 Leu Asp Val Ile Leu Pro Gln Glu Gly

<210> 293
 <211> 1002
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<400> 293
 atgaagatga acagctccct cccctccctc cgcgatgtat tcgcgaatga tttccgcatc 60
 ggggcggcgg tcaatcctgt gacgatcgag atgcaaaaac agttgttgat cgatcatgtc 120
 aacagtatta cggcagagaa ccatatgaag tttgagcatc ttcagccgga agaagggaaa 180
 tttacctttc aggaagcgga tcggattgtg gattttgctt gttcgaccg aatggcggtt 240
 cgaggggcaca cacttgatg gcacaaccag actccggatt ggggtgttca agatgggtcaa 300
 ggccatttcg tcagtcggga tgtgttgctt gagcggatga aatgtcacat ttcaactgtt 360
 gtacggcgat acaagggaaa aatatattgt tgggatgtca tcaacgaagc ggtagccgac 420
 gaaggagacg aattgttgag gccgtcgaag tggcgacaaa tcatcgggga cgattttatg 480
 gaacaagcat ttctctacgc ttatgaagct gaccagatg cactgctttt ttacaatgac 540
 tataatgaat gttttccgga aaagagagaa aaaatttttg cacttgtaa atcgctgcgt 600
 gataaaggca ttccgattca tggcatcggg atgcaagcgc attggagttt gactcgcccg 660
 tcgcttgatg aaattcgtgc ggccattgaa cgatatgcgt cccttggtgt tgttcttcat 720
 attacggaac tcgatgtatc catgtttgaa tttcacgac gtcgaaccga tttggcagct 780
 ccaacgtcac aaatgatcga acggcaggca gagcggatg ggcaaatttt tgctttgtt 840
 aaggagtatc gcgatgttat tcaaagtgtc acattttggg gaattgctga tgaccataca 900
 tggctcgata acittccagt gcacgggaga aaaaactggc cgcttttggt cgatgaacag 960
 cataaaccga aaccagcttt ttggcgggca gtgagtgtct ga 1002

<210> 294
 <211> 333
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<400> 294
 Met Lys Met Asn Ser Ser Leu Pro Ser Leu Arg Asp Val Phe Ala Asn
 1 5 10 15
 Asp Phe Arg Ile Gly Ala Ala Val Asn Pro Val Thr Ile Glu Met Gln
 20 25 30
 Lys Gln Leu Leu Ile Asp His Val Asn Ser Ile Thr Ala Glu Asn His
 35 40 45
 Met Lys Phe Glu His Leu Gln Pro Glu Glu Gly Lys Phe Thr Phe Gln
 50 55 60
 Glu Ala Asp Arg Ile Val Asp Phe Ala Cys Ser His Arg Met Ala Val
 65 70 75 80
 Arg Gly His Thr Leu Val Trp His Asn Gln Thr Pro Asp Trp Val Phe
 85 90 95
 Gln Asp Gly Gln Gly His Phe Val Ser Arg Asp Val Leu Leu Glu Arg
 100 105 110
 Met Lys Cys His Ile Ser Thr Val Val Arg Arg Tyr Lys Gly Lys Ile
 115 120 125
 Tyr Cys Trp Asp Val Ile Asn Glu Ala Val Ala Asp Glu Gly Asp Glu
 130 135 140
 Leu Leu Arg Pro Ser Lys Trp Arg Gln Ile Ile Gly Asp Asp Phe Met
 145 150 155 160
 Glu Gln Ala Phe Leu Tyr Ala Tyr Glu Ala Asp Pro Asp Ala Leu Leu
 165 170 175
 Phe Tyr Asn Asp Tyr Asn Glu Cys Phe Pro Glu Lys Arg Glu Lys Ile
 180 185 190
 Phe Ala Leu Val Lys Ser Leu Arg Asp Lys Gly Ile Pro Ile His Gly
 195 200 205
 Ile Gly Met Gln Ala His Trp Ser Leu Thr Arg Pro Ser Leu Asp Glu

210	Ile Arg Ala Ala Ile	215	Glu Arg Tyr Ala Ser	220	Gly Val Val Leu His
225	Ile Thr Glu Leu Asp	230	Val Ser Met Phe Glu	235	Phe His Asp Arg Arg
	245	250	Ile Glu Arg Gln Ala	255	Glu Arg
Asp Leu Ala Ala Pro	260	265	Thr Ser Glu Met Ile	270	Arg Asp Val Ile Gln
Tyr Gly Gln Ile Phe	280	285	Ala Leu Phe Lys Glu	290	Tyr Arg Thr Trp Leu
Ser Val Thr Phe Trp	295	300	Gly Ile Ala Asp Asp	305	His Thr Trp Leu Asp
Phe Pro Val His Gly	310	315	Arg Lys Asn Trp Pro	320	Leu Phe Asp Glu Gln
305 His Lys Pro Lys	325	330	Ala Phe Trp Arg Val		

<210> 295
 <211> 1134
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<400> 295	atgagatccg	tccgcatcgt	caccttttgc	ctcgccgcgc	cgctggccgt	cccgtgggtg	60
	acgtcgacgg	ccacggccaa	gccgtccgcc	gaccacgagg	ccgcgcacca	ctccaacgcc	120
	aagttcgacc	gcctgcgctg	ggccgcccc	gaagggttct	tcataggctc	cgcggcggcc	180
	ggcggcggcc	accacctcga	acaggactac	ccggaccctt	tcaccttcga	caagaagtag	240
	cggaagatcc	tgggccagca	gttcaactcg	gtctccgcgc	agaaccagat	gaagtgggag	300
	ttcatccacc	ccgagcgcca	ccagtaccgc	ttcgaggagg	ccgacgccat	cgctcgagttc	360
	gcccagcgga	accgccaggg	cgtgcgcggg	cacaccctcc	tgtggcacag	ccagaacccc	420
	gaatggctgg	aggaggcgga	cttcaccaag	gaggaactgc	gcgccatcct	caaggaccac	480
	atcgacacgg	tcgtcggccg	ctacgccggc	aagatccagc	agtgggacgt	ggccaacgag	540
	atcttcaacg	accaggccga	gctgcgcacc	gacgagaaca	tctggatacg	tgagctcggc	600
	ccggagatcg	tcgaggacgc	cttcgcgtgg	gcccacgagg	ccgaccccca	ggccaagctg	660
	ttcctcaacg	actacaacgt	cgagggcatc	aacgccaaga	gcgacgccta	ctacgagctc	720
	gcccaggaga	tgctggagca	gggcgtgccg	ctccacggat	tcggcgccca	gggccacctg	780
	agcaccgcgt	acggcttccc	gggcgacctg	cagcagaacc	tgacgcgggt	cgccgacctc	840
	ggtctggaga	ccgccatcac	cgagatcgac	gtccgcattg	acctcccggc	gagcggcaag	900
	cccaccaagg	agcagctgcg	gcagcaggcc	gactactacc	agcaggcact	gtcggcctgc	960
	ctggccgtga	acgactgcaa	ctccttcacc	atctggggct	tcaccgacaa	gtactcgtgg	1020
	gtgccggctc	tcttcgaggg	tgagggcagc	gccacgggtc	tgacggagaa	gttcgtccgc	1080
	aagccggcct	tcttcgcctc	gcagtcacc	ctgaaggagg	cgcgcaagcg	ctga	1134

<210> 296
 <211> 377
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<221> SIGNAL
 <222> (1)...(26)

<400> 296	Met Arg Ser Val Arg	Ile Val Thr Phe	Ala Leu Ala Ala	Ala Leu Ala
1	Val Pro Leu Val Thr	Ser Thr Ala Thr	Ala Lys Pro Ser	Ala Asp His
20	Glu Ala Ala Pro His	Ser Asn Ala Lys	Phe Asp Arg Leu	Arg Trp Ala
35	Ala Pro Glu Gly Phe	Phe Ile Gly Ser	Ala Ala Ala Gly	Gly Gly His
50	His Leu Glu Gln Asp	Tyr Pro Asp Pro	Phe Thr Phe Asp	Lys Lys Tyr
65	Arg Lys Ile Leu Gly	Gln Gln Phe Asn	Ser Val Ser Ala	Glu Asn Gln
85				

Met Lys Trp Glu Phe Ile His Pro Glu Arg Asp Gln Tyr Arg Phe Glu
 100 105 110
 Glu Ala Asp Ala Ile Val Glu Phe Ala Gln Arg Asn Arg Gln Ala Val
 115 120 125
 Arg Gly His Thr Leu Leu Trp His Ser Gln Asn Pro Glu Trp Leu Glu
 130 135 140
 Glu Gly Asp Phe Thr Lys Glu Glu Leu Arg Ala Ile Leu Lys Asp His
 145 150 155 160
 Ile Asp Thr Val Val Gly Arg Tyr Ala Gly Lys Ile Gln Gln Trp Asp
 165 170 175
 Val Ala Asn Glu Ile Phe Asn Asp Gln Ala Glu Leu Arg Thr Asp Glu
 180 185 190
 Asn Ile Trp Ile Arg Glu Leu Gly Pro Glu Ile Val Ala Asp Ala Phe
 195 200 205
 Arg Trp Ala His Glu Ala Asp Pro Glu Ala Lys Leu Phe Leu Asn Asp
 210 215 220
 Tyr Asn Val Glu Gly Ile Asn Ala Lys Ser Asp Ala Tyr Tyr Glu Leu
 225 230 235 240
 Ala Gln Glu Met Leu Glu Gln Gly Val Pro Leu His Gly Phe Gly Ala
 245 250 255
 Gln Gly His Leu Ser Thr Arg Tyr Gly Phe Pro Gly Asp Leu Gln Gln
 260 265 270
 Asn Leu Gln Arg Phe Ala Asp Leu Gly Leu Glu Thr Ala Ile Thr Glu
 275 280 285
 Ile Asp Val Arg Met Asp Leu Pro Ala Ser Gly Lys Pro Thr Lys Glu
 290 295 300
 Gln Leu Arg Gln Gln Ala Asp Tyr Tyr Gln Gln Ala Leu Ser Ala Cys
 305 310 315 320
 Leu Ala Val Asn Asp Cys Asn Ser Phe Thr Ile Trp Gly Phe Thr Asp
 325 330 335
 Lys Tyr Ser Trp Val Pro Val Phe Phe Glu Gly Glu Gly Ser Ala Thr
 340 345 350
 Val Met Thr Glu Lys Phe Val Arg Lys Pro Ala Phe Phe Ala Leu Gln
 355 360 365
 Ser Thr Leu Lys Glu Ala Arg Lys Arg
 370 375

<210> 297
 <211> 1842
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<400> 297
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 gagttgtatg agtgtaaaaa agttgttacc gcagcactgg tatgcttggc tttcgggtca 120
 tcgctgactt gggggcaatg caccacattt accaccagta ccattcggaa ttgcgatggt 180
 atagattacc agctctggag ccagaataac tctggcacga ccaatatgca aatcacggga 240
 gggaactcga atccaaacgg tggaaccttt gagggcacat ggagtggcac gatcaatgtt 300
 ctattccgcg cgggtaaaaa atggggcaca tccagcacca gtaccccaa aaccatcggc 360
 aatatctctc ttgaattcgc agcgacatgg agttcggctg ataattgtgaa aatgcttggc 420
 atctatggct gggcgtatta tccctcggga agcgaaccaa caaaaacgga aagcgggtcaa 480
 agcacgaact tttccaatca gattgagtat tacatcattc aagaccgcgg tagctataac 540
 ccggcatccg gcggcaccaa cgccaaaaag tacggtgaag ggacgatcga cggaatcgcg 600
 tatgattttt atgtcgccga ccgtatcggc caggccatgc tgacaggaac gggaaatttc 660
 aaacagtact tcagcgtgcc gaagagcaca agcagtcaca ggcaaagcgg cacggtttcc 720
 gtctccaaac attttgaggc ctgggaaaaa gcgggcatga agatgatgga ttgtcggtta 780
 tacgaagtcg cgatgaaagt ggaatcgtat accggttccg cgaatggcaa cggctcggcg 840
 aaagtgacca aaaatctcct cacgatcggc ggaagcagca gcaacgagtt tagtctcgta 900
 acgaatgttt ctcttgccag cgcggaacg gtgtccaaga gcccggacaa cgcatcctat 960
 gccccgaacg cctcacgggc gctcacgggc accccgaata ccggttgaa gtttggtggc 1020
 tgggaagggg acgcctcggg ttccacgagc ccaaccagcg ttaccatgag caaagacctc 1080
 acggttacag cgaagtttga gctggtatcg gaagaaggca gcacaaacct gatccaggat 1140
 ggcaacttcc cgagcggcag cgtaatctct acagatgacg gggcttcatg gaaactcggg 1200
 caaggggaaa actggggaaa ttccgcagcc acaacgagcg tcagcaatgg aatcgcgaca 1260
 gtcaatgtga caactgtcgg agcggaaagt tatcaaccgc agcttgtaga gtacggtttg 1320
 ggactcgaca tggacatgag ttacaaactt accttcaagg caagagccga tgcggcaagg 1380

aagattgaag	ttgcgttcca	gcaggcgggtg	gatccttggg	ctgggttatgc	ttcccaggaa	1440
ttcgacctga	ccacgaccga	tcaggatttc	gagttcgtat	tcacgatgac	caacgccagc	1500
gacccggcat	cacagttcgc	gttcaatctt	ggccaggcga	caggcgatgt	ctatatcagt	1560
gatgttaaac	tggtatacac	gacaggcacc	acacccatat	cccgcaccat	agtccgcggc	1620
aatacggcat	tcgtctcggg	aagtggcaga	accctgaata	tttcggcagt	cgacgcgtcc	1680
acacttcaga	tcaaggtagt	agatataaac	ggaaaggtaa	gagcgaattt	caacacggct	1740
ggtgcagcaa	gtgtttcctt	gtccaatatt	cctgcggggc	agtacttcgt	tggtatcaca	1800
ggcacaggca	taaaacaaat	ctcaccgatc	gttttggaat	aa		1842

<210> 298

<211> 613

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 298

Met	Arg	Ser	Gly	Ala	Phe	Cys	Phe	Ile	Ile	Val	Val	Leu	Ile	Leu	Asn
1				5					10					15	
Leu	Ile	Cys	Arg	Glu	Leu	Tyr	Glu	Cys	Lys	Lys	Val	Val	Thr	Ala	Ala
			20					25					30		
Leu	Val	Cys	Leu	Ala	Phe	Gly	Ser	Leu	Thr	Trp	Gly	Gln	Cys	Thr	
		35					40				45				
Thr	Phe	Thr	Thr	Ser	Thr	Ile	Arg	Asn	Cys	Asp	Gly	Ile	Asp	Tyr	Glu
	50					55					60				
Leu	Trp	Ser	Gln	Asn	Asn	Ser	Gly	Thr	Thr	Asn	Gln	Ile	Thr	Gly	
65				70					75					80	
Gly	Asn	Ser	Asn	Pro	Asn	Gly	Gly	Thr	Phe	Glu	Ala	Thr	Trp	Ser	Gly
			85						90					95	
Thr	Ile	Asn	Val	Leu	Phe	Arg	Ala	Gly	Lys	Lys	Trp	Gly	Thr	Ser	Ser
			100					105					110		
Thr	Ser	Thr	Pro	Lys	Thr	Ile	Gly	Asn	Ile	Ser	Leu	Glu	Phe	Ala	Ala
		115					120					125			
Thr	Trp	Ser	Ser	Val	Asp	Asn	Val	Lys	Met	Leu	Gly	Ile	Tyr	Gly	Trp
	130					135					140				
Ala	Tyr	Tyr	Pro	Ser	Gly	Ser	Glu	Pro	Thr	Lys	Thr	Glu	Ser	Gly	Gln
145					150					155					160
Ser	Thr	Asn	Phe	Ser	Asn	Gln	Ile	Glu	Tyr	Tyr	Ile	Ile	Gln	Asp	Arg
			165						170					175	
Gly	Ser	Tyr	Asn	Pro	Ala	Ser	Gly	Gly	Thr	Asn	Ala	Lys	Lys	Tyr	Gly
			180					185					190		
Glu	Gly	Thr	Ile	Asp	Gly	Ile	Ala	Tyr	Asp	Phe	Tyr	Val	Ala	Asp	Arg
		195					200					205			
Ile	Gly	Gln	Ala	Met	Leu	Thr	Gly	Thr	Gly	Asn	Phe	Lys	Gln	Tyr	Phe
	210					215					220				
Ser	Val	Pro	Lys	Ser	Thr	Ser	Ser	His	Arg	Gln	Ser	Gly	Thr	Val	Ser
225					230				235					240	
Val	Ser	Lys	His	Phe	Glu	Ala	Trp	Glu	Lys	Ala	Gly	Met	Lys	Met	Met
			245						250					255	
Asp	Cys	Arg	Leu	Tyr	Glu	Val	Ala	Met	Lys	Val	Glu	Ser	Tyr	Thr	Gly
			260					265					270		
Ser	Ala	Asn	Gly	Asn	Gly	Ser	Ala	Lys	Val	Thr	Lys	Asn	Leu	Leu	Thr
		275					280					285			
Ile	Gly	Gly	Ser	Ser	Ser	Asn	Glu	Phe	Ser	Leu	Val	Thr	Asn	Val	Ser
						295					300				
Pro	Ala	Ser	Ala	Gly	Thr	Val	Ser	Lys	Ser	Pro	Asp	Asn	Ala	Ser	Tyr
305					310					315				320	
Ala	Pro	Asn	Ala	Ser	Val	Gln	Leu	Thr	Ala	Thr	Pro	Asn	Thr	Gly	Trp
			325						330					335	
Lys	Phe	Val	Gly	Trp	Glu	Gly	Asp	Ala	Ser	Gly	Ser	Thr	Ser	Pro	Thr
			340					345					350		
Ser	Val	Thr	Met	Ser	Lys	Asp	Leu	Thr	Val	Thr	Ala	Lys	Phe	Glu	Leu
		355					360					365			
Val	Ser	Glu	Glu	Gly	Ser	Thr	Asn	Leu	Ile	Gln	Asp	Gly	Asn	Phe	Pro
		370				375					380				
Ser	Gly	Ser	Val	Ile	Ser	Thr	Asp	Asp	Gly	Ala	Ser	Trp	Lys	Leu	Gly
385					390				395					400	
Gln	Gly	Glu	Asn	Trp	Gly	Asn	Ser	Ala	Ala	Thr	Thr	Ser	Val	Ser	Asn

Gly Ile Ala Thr Val Asn Val Thr Thr Val Gly Ala Glu Ala Tyr Gln
 405 410 415
 420 425 430
 Pro Gln Leu Val Gln Tyr Gly Leu Gly Leu Asp Met Asp Met Ser Tyr
 435 440 445
 Lys Leu Thr Phe Lys Ala Arg Ala Asp Ala Ala Arg Lys Ile Glu Val
 450 455 460
 Ala Phe Gln Gln Ala Val Asp Pro Trp Ala Gly Tyr Ala Ser Gln Glu
 465 470 475
 Phe Asp Leu Thr Thr Asp Gln Asp Phe Glu Phe Val Phe Thr Met
 485 490 495
 Thr Asn Ala Ser Asp Pro Ala Ser Gln Phe Ala Phe Asn Leu Gly Gln
 500 505 510
 Ala Thr Gly Asp Val Tyr Ile Ser Asp Val Lys Leu Val Tyr Thr Thr
 515 520 525
 Gly Thr Thr Pro Ile Ser Arg Thr Ile Val Arg Gly Asn Thr Ala Phe
 530 535 540
 Val Ser Val Ser Gly Arg Thr Leu Asn Ile Ser Ala Val Asp Ala Ser
 545 550 555
 Thr Leu Gln Ile Lys Val Val Asp Ile Asn Gly Lys Val Arg Ala Asn
 565 570 575
 Phe Asn Thr Ala Gly Ala Ala Ser Val Ser Leu Ser Asn Ile Pro Ala
 580 585 590
 Gly Gln Tyr Phe Val Gly Ile Thr Gly Thr Gly Ile Lys Gln Ile Ser
 595 600 605
 Pro Ile Val Leu Glu
 610

<210> 299
 <211> 1047
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<400> 299
 atgtttttga gtctcaaaag agtggcggcg cttgttttgcg tcgccgggtct cggcatctct 60
 gcggcccaag cacagacctg cctgacctcg agtcaaaccg gcactaaca cggcttctac 120
 tattcgttct ggaaagacaa tcccggcacc gtgaatttct gtctgcagtc cggcggccgc 180
 tacacctcca actggagcgg catcaacaac tgggtcggcg gaaagggatg gcagacgggt 240
 tcccgcagag tgggtgaacta ctgggcagc ttcaattcgc ctggcaatgg gtacctgact 300
 ctctatgggt ggaccaccaa tccgctcatc gagtactaca ttgtcgacaa ctggggcacg 360
 tatcgctccgc cgggtgggca ggggttcatg ggcacgggtga ccagcgatgg cgcgacgtat 420
 gacgtctatc gcacgcagcg cgtcaatcag ccctgcatca ccggcagcag ttgcacgttc 480
 tatcaatact ggagcgtgcg gcagtcgaag cggaccggtg gcacgatcac caccggcaac 540
 cacttcgatg cctgggccag ctacggaatg aatctgggcg ctcaacta ccagatcatg 600
 gcgaccgagg gctatcaaag cagcggcagc tctgacatca cggtagtgga gggaagcagc 660
 agcagtagca gcggtggtgg cagcagcagc agcagcagtg gcggcggcgg caccaagagc 720
 ttacacggtcc gggcgcgcgg aaccgcgggt ggtgagtcca tcacgtgctg tgtgaacaat 780
 cagaacgtgc agacctggac gctgggcacc agcatgacga actacacggc atcgacgtcg 840
 ttgagcgggtg gcatcaccgt ggcttacacg aacgacagtg gcaatcgcg cgtgcaggtg 900
 gattacatca tcgtgaacgg ctgcacgcgt cagtcagaag cgcagagcta caacaccggg 960
 ctctatgcc aaggtagttg tggtagcggc tccaatagcg aatggatgca ttgcaacggc 1020
 gccattggct acgggaatac gccgtag 1047

<210> 300
 <211> 348
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<221> SIGNAL
 <222> (1)...(24)

<400> 300
 Met Phe Leu Ser Leu Lys Arg Val Ala Ala Leu Val Cys Val Ala Gly

1	Leu	Gly	Ile	Ser	Ala	Ala	Gln	Ala	Gln	Thr	Cys	Leu	Thr	Ser	Ser	Gln	
			20	Asn	Asn	Gly	Phe	Tyr	25	Ser	Phe	Trp	Lys	30	Asp	Asn	Pro
	Thr	Gly	Thr	35	Asn	Asn	Gly	Phe	40	Tyr	Ser	Phe	Trp	45	Asp	Asn	Pro
	Gly	Thr	Val	Asn	Phe	Cys	Leu	Gln	Ser	Gly	Gly	Arg	Tyr	Thr	Ser	Asn	
	Trp	Ser	Gly	Ile	Asn	Asn	Trp	Val	Gly	Gly	Lys	Gly	Trp	Gln	Thr	Gly	
65	Ser	Arg	Arg	Val	Val	Asn	Tyr	Ser	Gly	Ser	Phe	Asn	Ser	Pro	Gly	Asn	
	Gly	Tyr	Leu	Thr	Leu	Tyr	Gly	Trp	Thr	Thr	Asn	Pro	Leu	Ile	Glu	Tyr	
	Tyr	Ile	Val	Asp	Asn	Trp	Gly	Thr	Thr	Arg	Pro	Pro	Gly	Gly	Gln	Gly	
	Phe	Met	Gly	Thr	Val	Thr	Ser	Asp	Gly	Ala	Thr	Tyr	Asp	Val	Tyr	Arg	
	Thr	Gln	Arg	Val	Asn	Gln	Pro	Cys	Ile	Thr	Gly	Ser	Ser	Cys	Thr	Phe	
145	Tyr	Gln	Tyr	Trp	Ser	Val	Arg	Gln	Ser	Lys	Arg	Thr	Gly	Gly	Thr	Ile	
	Thr	Thr	Gly	Asn	His	Phe	Asp	Ala	Trp	Ala	Ser	Tyr	Gly	Met	Asn	Leu	
	Gly	Ala	His	Asn	Tyr	Gln	Ile	Met	Ala	Thr	Glu	Gly	Tyr	Gln	Ser	Ser	
	Gly	Ser	Ser	Asp	Ile	Thr	Val	Ser	Glu	Gly	Ser	Ser	Ser	Ser	Ser	Ser	
	Gly	Gly	Gly	Ser	Ser	Thr	Ser	Ser	Ser	Gly	Gly	Gly	Gly	Thr	Lys	Ser	
225	Phe	Thr	Val	Arg	Ala	Arg	Gly	Thr	Ala	Gly	Gly	Glu	Ser	Ile	Thr	Leu	
	Arg	Val	Asn	Asn	Gln	Asn	Val	Gln	Thr	Trp	Thr	Leu	Gly	Thr	Ser	Met	
	Thr	Asn	Tyr	Thr	Ala	Ser	Thr	Ser	Leu	Ser	Gly	Gly	Ile	Thr	Val	Ala	
	Tyr	Thr	Asn	Asp	Ser	Gly	Asn	Arg	Asp	Val	Gln	Val	Asp	Tyr	Ile	Ile	
	Val	Asn	Gly	Ser	Thr	Arg	Gln	Ser	Glu	Ala	Gln	Ser	Tyr	Asn	Thr	Gly	
305	Leu	Tyr	Ala	Asn	Gly	Ser	Cys	Gly	Gly	Gly	Ser	Asn	Ser	Glu	Trp	Met	
	His	Cys	Asn	Gly	Ala	Ile	Gly	Tyr	Gly	Asn	Thr	Pro					
			340						345								

<210> 301
 <211> 642
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<400> 301																	
atgtttaagt	ttacaaagaa	attccttagtt	gggttaacgg	cagctttgat	gagtatgagc												60
ttgttttcgg	caaacgcctc	tgcagctaac	acagactact	ggcaaaattg	gactgatggg												120
ggcgggaacag	taaacgctgt	caatgggtct	ggcgggaatt	acagtgtgaa	ttgggtctaatt												180
accggaaatt	tcgttggttg	ttaaagggttg	actacaggtt	cgccatttag	gacgataaac												240
tataatgccg	gagtttgggc	gccgaacggc	aatgcatatt	tgactttata	tggttggacg												300
cgatccctc	tcatagaata	ttatgtagt	gattcatggg	gtacttatag	acctactgga												360
acgtataaag	gtacggttta	cagtgatggg	ggtacatatg	acgtgtacac	aactacacgt												420
tatgatgcac	cttccattga	tggcgataaa	actactttta	cgcagtactg	gagtgttcgc												480
cagtcgaaga	gaccaactgg	aagcaacgct	acaatcactt	tcagcaatca	cgtaaacgca												540
tggaagagat	atgggatgaa	tctgggtagt	aattgggtctt	accaagtctt	agcgacagag												600
ggatatcgaa	gtagtggaa	ttctaacgta	acagtgtggt	aa													642

<210> 302
 <211> 213
 <212> PRT
 <213> Unknown

<220>

<223> Obtained from an environmental sample.

<221> SIGNAL

<222> (1)...(28)

<400> 302

```

Met Phe Lys Phe Thr Lys Lys Phe Leu Val Gly Leu Thr Ala Ala Leu
 1           5           10           15
Met Ser Met Ser Leu Phe Ser Ala Asn Ala Ser Ala Ala Asn Thr Asp
          20           25           30
Tyr Trp Gln Asn Trp Thr Asp Gly Gly Thr Val Asn Ala Val Asn
          35           40           45
Gly Ser Gly Gly Asn Tyr Ser Val Asn Trp Ser Asn Thr Gly Asn Phe
          50           55           60
Val Val Gly Lys Gly Trp Thr Thr Gly Ser Pro Phe Arg Thr Ile Asn
65           70           75           80
Tyr Asn Ala Gly Val Trp Ala Pro Asn Gly Asn Ala Tyr Leu Thr Leu
          85           90           95
Tyr Gly Trp Thr Arg Ser Pro Leu Ile Glu Tyr Tyr Val Val Asp Ser
          100          105          110
Trp Gly Thr Tyr Arg Pro Thr Gly Thr Tyr Lys Gly Thr Val Tyr Ser
          115          120          125
Asp Gly Gly Thr Tyr Asp Val Tyr Thr Thr Thr Arg Tyr Asp Ala Pro
          130          135          140
Ser Ile Asp Gly Asp Lys Thr Thr Phe Thr Gln Tyr Trp Ser Val Arg
145          150          155          160
Gln Ser Lys Arg Pro Thr Gly Ser Asn Ala Thr Ile Thr Phe Ser Asn
          165          170          175
His Val Asn Ala Trp Lys Arg Tyr Gly Met Asn Leu Gly Ser Asn Trp
          180          185          190
Ser Tyr Gln Val Leu Ala Thr Glu Gly Tyr Arg Ser Ser Gly Ser Ser
          195          200          205
Asn Val Thr Val Trp
          210

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<210> 303

<211> 1404

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 303

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ttgactataa aggcctggcc cgggacggct gccagctata ataccaatag aggtttttatc      60
atgtcctacg ctcagtttaa gggggccgct accctagcga cgtccttcct gctcgcagtc      120
accttgacag cctgtggagg cagcaaattc aaaccggttc tgccagacct atcgaacagc      180
agctcgtcac caagcagcag ctcgtcatca agcagcagct cctcaagtcc ctccagtagc      240
agttcgagct cttctagtgc tccctccagc caaacgttct tcattgagcc ggatttccag      300
cttcacaccc tggcggactt cccgattgga gtggcagctc cggcagccaa tgagccatac      360
agcatcttca accaaaccga tggactgatg cggcaggatg tgatcctgga gcatttcaac      420
gaaatgaccg ctggcaacat catgaaaatg agctacgtgt acgcagggtca acgtgcaaat      480
cagcaaccgg atcaattcga cttcagcaga gctgatgagc tgggtggggt tgcccacgca      540
aacagtgtga agattcacgg tcacgcccctc gtttggcacg ccgactatca agttccgggt      600
ttcatgcaga attatgatgg cgactttgct gagatgttgg ccaatcacgc gcggagtgtt      660
gtggaacatt ttgacgaaga gtttccaggt accgtggtca gctgggatgt ggtcaacgag      720
gcgataaccg acaacttcgg aaccgatata aatggctggc gccggtcgct gttttacaac      780
gcgctgccgc ccgcgacaga agacgatatt cctgagtaca tccgcgttgc cttccaggcc      840
gctcgcgatg ccaaccggga catcgacctc tattacaatg attacgacaa taccgccaac      900
accaaccggc tgaacaaaac cctgcagatc gccgatgccc tggccgagga cgagctgatc      960
gacggtgtgg gattccagat gcacgtctat atgacgtacc cgagccttag tcacttccaa      1020
aacgcgtttc aagaagtggg tgatcgaggc ttgaagggtg agatcaccga gctggacgta      1080
tcggtgggtc acccatacgg tcagagcact ccgccaccgc agcccgtcta cgatgaagcg      1140
ttggcaggcg cacagaaaaa gcggttctgc gatataacca gagtctatct ggaaacgggt      1200
ccggtcgagc ttcgcggcgg tctcactgtt tgggggcttg ccgacaacga aagctggttg      1260
atgcaacagt tcaggaacgc aacgggagcg aactacaccg acgtgtggcc gttgtgttcc      1320
aacgccgacc tgtcagccaa acctacactc caaggcgtgg ccgatgctct gcagggtctc      1380

```

ccctgcacca ccgacctcga ctaa

1404

<210> 304

<211> 467

<212> PRT

<213> Unknown

<220>

<223> obtained from an environmental sample.

<221> SIGNAL

<222> (1)...(74)

<400> 304

Met	Thr	Ile	Lys	Ala	Trp	Pro	Gly	Thr	Ala	Ala	Ser	Tyr	Asn	Thr	Asn
1				5					10					15	
Arg	Gly	Phe	Ile	Met	Ser	Tyr	Ala	Gln	Phe	Lys	Gly	Ala	Ala	Thr	Leu
			20					25					30		
Ala	Thr	Ser	Phe	Leu	Leu	Ala	Val	Thr	Leu	Thr	Ala	Cys	Gly	Gly	Ser
		35					40					45			
Lys	Ser	Lys	Pro	Val	Leu	Pro	Asp	Pro	Ser	Asn	Ser	Ser	Ser	Ser	Ser
	50					55					60				
Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser
65					70					75					80
Ser	Ser	Ser	Ser	Ser	Ser	Ala	Pro	Ser	Ser	Gln	Thr	Phe	Phe	Ile	Glu
				85				90						95	
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Glu	Ser	Trp	Leu	Met	Gln	Gln	Phe	Arg	Asn	Ala	Thr	Gly	Ala	Asn	Tyr
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<210> 308
 <211> 1242
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<400> 308
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 Val Asn Pro Gly Gly Arg Gln Trp Arg Pro Asn Leu Met Gly Tyr Asp
 35 40 45
 Ala Leu Ser Ala Phe Gly Ser Pro Ser Tyr Tyr Ala Ile Lys Met Phe
 50 55 60
 Ser Asn Asn Leu Gly Asp Thr Ile Leu Lys Pro Ser Leu Ser Gly Ala
 65 70 75 80
 Arg Leu Pro Val Ser Val Thr Gln Glu Gln Lys Ser Gly Thr Ile Phe
 85 90 95
 Ile Lys Leu Val Asn Pro Gln Thr Thr Pro Gln Ser Val Lys Ile Asp
 100 105 110
 Leu Lys Gly Val Arg Ser Val Glu Phe Ser Gly Thr Ala Thr Val Leu
 115 120 125
 Ala Ala Asp Ser Gly Ala Leu Asn Ser Ile Asp Ala Pro Thr Lys Val
 130 135 140
 Val Pro Val Thr Arg Arg Ile Thr Gly Ile Ser Pro Ser Phe Ala Gln
 145 150 155 160
 Thr Leu Glu Pro Tyr Ser Ile Thr Val Leu Gln Ile Lys Ala Thr Ala

Leu	Pro	Thr	Ala	Thr	Ala	Asn	Ala	Val	Ala	Pro	Pro	Thr	Phe	Thr	Thr
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Glu	Pro	Lys	Val	Asn	Thr	Thr	Thr	Pro	Val	Thr	Ile	Pro	Val	Ala	Thr
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Ala	Pro	Leu	Lys	Asn	Ala	Phe	Lys	Gly	Lys	Phe	Leu	Ile	Gly	Thr	Val
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Leu	Ser	Gly	Pro	Asp	Leu	Arg	Gly	Gln	Gln	Thr	Arg	Ser	Val	Gly	Ile
				245				250						255	
Ala	Thr	Thr	His	Phe	Asp	Ala	Phe	Thr	Ala	Glu	Asn	Glu	Met	Lys	Pro
			260					265					270		
Asp	Ala	Met	Gln	Pro	Arg	Glu	Gly	Gln	Phe	Asn	Phe	Ala	Ala	Gly	Asp
		275					280					285			
Arg	Leu	Val	Glu	Leu	Ala	Glu	Lys	Ser	Gly	Ala	Thr	Pro	Ile	Gly	His
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Thr	Leu	Ile	Trp	His	Ser	Gln	Thr	Pro	Arg	Trp	Phe	Phe	Glu	Gly	Pro
305					310					315					320
Asp	Gly	Gln	Pro	Ala	Asn	Arg	Glu	Leu	Ala	Leu	Ala	Arg	Met	Arg	Lys
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His	Ile	Ala	Thr	Val	Val	Gly	His	Tyr	Lys	Gly	Arg	Val	Lys	Gln	Trp
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Asp	Val	Val	Asn	Glu	Ala	Ile	Asn	Asp	Gly	Pro	Gly	Val	Leu	Arg	Gln
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Ser	Pro	Trp	Leu	Arg	Ala	Ile	Gly	Glu	Asp	Tyr	Ile	Ala	Glu	Ala	Phe
	370					375					380				
Arg	Ala	Ala	His	Ala	Ala	Asp	Pro	Asp	Ala	Ile	Leu	Ile	Tyr	Asn	Asp
385					390					395					400
Tyr	Asn	Ile	Glu	Met	Gly	Tyr	Lys	Arg	Pro	Lys	Ala	Ile	Gln	Leu	Leu
				405					410					415	
Lys	Ser	Leu	Val	Asp	Gln	Lys	Val	Pro	Ile	His	Ala	Val	Gly	Ile	Gln
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Gly	His	Trp	Arg	Met	Asp	Thr	Asn	Leu	Thr	Glu	Val	Glu	Gln	Ala	Ile
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Lys	Glu	Phe	Ser	Ala	Leu	Gly	Leu	Lys	Val	Met	Ile	Thr	Glu	Leu	Asp
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465					470					475					480
Gln	Asn	Met	Thr	Pro	Glu	Gln	Arg	Ala	Ala	Val	Asn	Pro	Tyr	Thr	Asn
				485					490					495	
Gly	Leu	Pro	Asp	Asp	Val	Ala	Gln	Lys	His	Ala	Asp	Lys	Tyr	Arg	Gln
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Ala	Phe	Asp	Ile	Phe	Leu	Arg	Tyr	Lys	Asp	Val	Ile	Glu	Arg	Val	Thr
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Phe	Trp	Gly	Val	Asp	Asp	Ala	His	Ser	Trp	Leu	Asn	Gly	Phe	Pro	Ile
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Arg	Gly	Arg	Thr	Asp	Tyr	Pro	Leu	Leu	Phe	Asp	Arg	Gln	Gly	Lys	Pro
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Lys	Pro	Ala	Phe	Phe	Ala	Val	Gln	Asn	Leu	Ala	Leu	Gly	Val	Thr	Ala
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Ala	Pro	Gln	Ser	Asn	Ala	Ser	Ser	Ala	Pro	Arg	Ala	Val	Ala	Gln	Ala
			580					585					590		
Ala	Pro	Ala	Thr	Ser	Asn	Ile	Arg	Gly	Gln	Glu	Phe	Pro	Arg	Val	Glu
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Ser	Asp	Leu	Arg	Val	Thr	Phe	Arg	Ile	Lys	Ala	Pro	Glu	Ala	Gln	Lys
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Val	Gln	Phe	Asp	Leu	Gly	Lys	Pro	Tyr	Asp	Ala	Thr	Arg	Asp	Ala	Glu
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Gly	Asn	Trp	Thr	Ala	Thr	Thr	Glu	Pro	Gln	Val	Pro	Gly	Phe	His	Tyr
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Tyr	Asn	Leu	Val	Ile	Asp	Gly	Val	Arg	Val	Asn	Asp	Pro	Ala	Ser	Glu
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Thr	Phe	Tyr	Gly	Ala	Gly	Arg	Gln	Met	Ser	Gly	Ile	Glu	Ile	Pro	Asp
		675					680					685			
Pro	Asp	Ser	Ala	Phe	Tyr	Ser	Pro	Gln	Asn	Val	Pro	His	Gly	Glu	Val
	690					695					700				
Arg	Glu	Arg	Trp	Tyr	Phe	Ser	Asn	Thr	Thr	Gln	Ala	Trp	Arg	Arg	Ile
705					710					715					720

Phe Ile Tyr Thr Pro Pro Gly Tyr Asp Thr Asn Gln Val Glu Arg Phe
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 Pro Val Leu Tyr Leu Gln His Gly Gly Gly Glu Asp Glu Arg Gly Trp
 740 745 750
 Pro Gln Gln Gly Arg Met Ser Phe Ile Met Asp Asn Leu Ile Ala Thr
 755 760 765
 Arg Lys Ala Lys Pro Met Leu Val Val Met Glu Gln Gly Tyr Ala Arg
 770 775 780
 Lys Pro Asn Glu Pro Gln Val Pro Leu Arg Pro Gly Gly Ser Ala
 785 790 795 800
 Gly Ala Met Pro Pro Asp Phe Asn Arg Met Phe Gly Thr Leu Gly Glu
 805 810 815
 Val Phe Thr Lys Asp Leu Ile Pro Phe Ile Asp Ala Asn Tyr Arg Thr
 820 825 830
 Lys Thr Asp Arg Glu Asn Arg Ala Met Ala Gly Leu Ser Met Gly Gly
 835 840 845
 Met Gln Ser Phe Leu Ile Gly Leu Ser Asn Thr Asp Leu Phe Ala His
 850 855 860
 Ile Gly Gly Phe Ser Gly Ala Gly Gly Gly Phe Gly Gly Gly Thr Phe
 865 870 875 880
 Asp Ala Lys Thr Ala His Gly Gly Val Met Ala Asp Ala Asp Ala Phe
 885 890 895
 Asn Lys Lys Val Arg Thr Leu Phe Leu Ser Ile Gly Thr Ala Glu Asn
 900 905 910
 Glu Arg Phe Gln Ser Ser Val Arg Gly Tyr Arg Asp Ala Leu Thr Lys
 915 920 925
 Ala Gly Ile Lys Thr Thr Phe Tyr Glu Ser Pro Gly Thr Ser His Glu
 930 935 940
 Trp Leu Thr Trp Arg Arg Ser Leu Lys Glu Phe Ala Pro Leu Leu Phe
 945 950 955 960
 Gln Glu Val Glu Val Gln Ile Glu Arg Gly Pro Asn Ala Arg Pro Ile
 965 970 975
 Ala Pro Gln Pro Ile Asn Leu Gly Pro Asp Asp Lys Pro Ala Phe Pro
 980 985 990
 Pro Val Pro Ala Gly Phe Asp Val Arg Arg Asn Asp Ile Pro His Gly
 995 1000 1005
 Glu Ile Lys Leu Val Glu Tyr Pro Ser Ala Thr Val Gly Thr Asn Arg
 1010 1015 1020
 Lys Met Gln Val Tyr Thr Pro Pro Gly Tyr Asn Pro Gln Glu Lys Tyr
 1025 1030 1035 1040
 Ala Val Leu Tyr Leu Leu His Gly Ile Gly Gly Asp Glu Trp Glu Trp
 1045 1050 1055
 Lys Asn Gly Gly Thr Pro Glu Val Ile Leu Asp Asn Leu Tyr Ala Ala
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 Lys Lys Leu Gln Pro Met Ile Val Val Met Pro Asn Gly Arg Ala Gln
 1075 1080 1085
 Lys Asp Asp Arg Pro Ile Gly Asn Val Phe Ala Ser Ala Pro Ala Phe
 1090 1095 1100
 Glu Thr Phe Glu Lys Asp Leu Leu Asn Asp Val Ile Pro Phe Ile Glu
 1105 1110 1115 1120
 Lys Asn Tyr Pro Val Lys Thr Gly Ala Glu Asn Arg Ala Leu Ala Gly
 1125 1130 1135
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 1140 1145 1150
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 1155 1160 1165
 Thr Gly Ala Arg Leu Leu Ala Asn Pro Asp Asp Ala Lys Lys Lys Leu
 1170 1175 1180
 Lys Leu Leu Trp Val Ser Cys Gly Asp Lys Asp Gly Leu Phe Phe Ile
 1185 1190 1195 1200
 Ser Gln Arg Thr His Arg Tyr Leu Ala Glu Asn Asn Val Pro His Val
 1205 1210 1215
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 1235 1240

<210> 309

<211> 1830

<212> DNA
<213> Unknown

<220>
<223> Obtained from an environmental sample.

<400> 309

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<210> 310
<211> 609
<212> PRT
<213> Unknown

<220>
<223> Obtained from an environmental sample.

<221> SIGNAL
<222> (1)...(20)

<400> 310

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			20					25					30		
Thr	Ala	Gln	Gly	Ala	Gln	Thr	Trp	Thr	Gly	Lys	Lys	Gly	Ala	Thr	Thr
		35					40					45			
Leu	Gly	Gly	Ser	Gly	Asp	Asp	Ala	Tyr	Gly	Val	Glu	Thr	Trp	Thr	Glu
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Ala	Gly	Gly	Asp	Ala	Thr	Lys	Phe	Thr	Trp	Phe	Gly	Pro	Asn	Gln	Gly
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Gly	Gly	Phe	Ala	Tyr	Arg	Ala	Glu	Trp	Thr	Asn	Ser	Thr	Asp	Tyr	Leu
			85					90					95		
Gly	Arg	Phe	Gly	Tyr	Phe	Trp	Gly	Ile	Asp	Gly	Lys	Lys	Trp	Asp	Lys
		100					105						110		
Leu	Gly	Asp	Leu	Cys	Val	Asp	Tyr	Asn	Tyr	Lys	Arg	Ser	Ala	Asn	Gly
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<400> 311						
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atgctaaaaa	gatatagcta	tggtgtcaca	aacgttactt	tctggggact	caaagatgac	2460
tattcatggc	tttcaacaag	cagatctaac	tggccactac	tgtttgacaa	caactaccag	2520
gcaaaatttg	catactgggc	aattgttgaa	ccgtcagtat	tgccacttgc	tataaacaac	2580
ggatattcaa	acaattgcatc	agcaaggata	gatggagttt	tagacagaga	atacaaaggt	2640
gcgattgccaa	ttaaagattac	aaatgaaagt	ggacaagaag	ttgcaactgt	tcgagctcta	2700
tggaattcaa	gtgaactcag	cctctatata	tcggtcaatg	atacaacaat	agatgctgct	2760
aatgataaag	tagttgtatt	tgtagaccag	gataatggaa	aaatgccaga	aattaaacct	2820
gatgactatt	gggtttcaat	tacgagaact	ggtaaaaaag	cacaatcagc	tcaaggctat	2880
gtaaaggatt	atgctgtcgt	gcagcaagca	aatggatatg	tggttgagtt	gaagctttta	2940
attaataaca	cgtttaactgt	taactcttct	ataggttttg	atatagcaat	ctttgacaat	3000
ggagttcaat	acagctggaa	tgacaagaca	aactcacagt	ttatagaaac	tgataactat	3060
ggtattttta	caatggcaga	tagcgtcaag	tttgcttctg	ctccaaaagg	tacagcaata	3120
attgatgcag	aattagatga	tacatggaaa	aacgctcagg	aaataacaac	tgacacaaag	3180
gtcacgggta	caggcacagt	atacgactca	gcttatgcaa	aggctaagat	gatgtgggat	3240
gaaaatagta	tctatgtcta	tgcaattggt	tatgacttgc	ttttgaacaa	ggctaataca	3300
aatccatggg	agcaggattc	aattgagata	tttgtggatg	aaaataatca	caaaacgcct	3360
tactatgaaa	atgatgatgt	tcagtacaga	gtgaactatg	agaatactca	aacattttggc	3420
acgaacggta	ctcctcagaa	cttcattaca	gcaacaaga	taattccaaa	cggatatata	3480
gtggaagctc	aagtttacat	gaggacgaca	aagctttctg	aaggaatggg	tataggcttt	3540
gacattcaag	tgaatgatgc	agaccataca	ggtaaaagag	tcggtgttct	aacctggaat	3600
gataagggtt	ggaacaatta	tagagacaca	acaaggttta	gatgcttaga	gcttgtagca	3660
gcacctgtaa	gccagccacc	aatacaagct	ccatcaccat	cacaaccaac	aacaataacg	3720
tatatataaa	caccgacacc	aacacagcca	tcaaccacaa	cacagcagca	acctgctcag	3780
caaccatcac	agcagcaaca	gcaaccgcaa	cagcagcagc	ctgcacagac	acaacaacct	3840
cagacacagc	ctgcacaaaa	gcctcagaat	gttggttctga	taaagataga	ccagacaaaa	3900
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ggtgcaaaat	ga					3972

<210> 312
 <211> 1323
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<221> SIGNAL
 <222> (1)...(33)

<400> 312
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 Ser Ile Leu Ser Pro Gly Tyr Leu Pro Phe Leu Ser Thr Lys Ala Asn
 20 25 30
 Ala Gln Thr Gln Asn Thr Pro Thr Ile Leu Lys Phe Asp Phe Glu Ser
 35 40 45
 Gly Asn Gln Gly Trp Thr Gly Arg Gly Leu Ser Thr Thr Val Ala Thr
 50 55 60
 Val Tyr Asn Val Ala Tyr Glu Gly Asp Tyr Ser Leu Lys Val Ser Gly
 65 70 75 80
 Arg Asn Ala Ser Trp Asp Gly Ala Val Ile Asp Leu Thr Asp Lys Leu
 85 90 95
 Ser Ala Asn Val Ser Tyr Thr Val Ser Leu Phe Val Arg His Ser Asp
 100 105 110
 Gln Lys Pro Gln Arg Phe Ser Val Tyr Ala Tyr Val Lys Asp Ser Ala
 115 120 125
 Ser Glu Lys Tyr Ile Pro Val Val Asp Lys Val Ala Val Pro Asn Tyr
 130 135 140
 Trp Lys Gln Leu Val Gly Lys Phe Thr Ile Asn Thr Ser Asn Pro Val
 145 150 155 160
 Gln Lys Ile Gln Leu Leu Val Cys Val Pro Thr Asn Lys Ser Leu Glu
 165 170 175
 Phe Phe Ile Asp Ser Val Leu Ile Ala Ser Ser Ala Gly Ala Thr Ser
 180 185 190
 Gly Val Val Lys Ser Thr Asn Phe Glu Ser Gly Thr Thr Glu Gly Trp
 195 200 205
 Gln Ala Arg Gly Thr Gly Ser Val Ala Gln Ile Ser Val Val Ser Thr
 210 215 220
 Val Ala His Ser Gly Ser Lys Ser Leu Tyr Val Thr Gly Arg Val Gln
 225 230 235 240
 Thr Trp Gln Gly Ala Gln Ile Asp Leu Thr Ser Leu Leu Glu Lys Gly
 245 250 255
 Lys Glu Tyr Gln Phe Ser Val Trp Val Tyr Gln Asp Ser Gly Ser Asp
 260 265 270
 Gln Lys Leu Thr Leu Thr Met Glu Arg Lys Asn Ala Asp Gly Ser Thr
 275 280 285
 Asn Tyr Asp Thr Ile Lys Trp Gln Gln Thr Val Ser Ser Asn Thr Trp
 290 295 300
 Val Glu Leu Thr Gly Ser Tyr Thr Val Pro Ala Thr Ala Thr Gln Leu
 305 310 315 320
 Ile Phe Tyr Ile Glu Ser Pro Asn Ala Thr Leu Ser Phe Tyr Ile Asp
 325 330 335
 Asp Phe Thr Ala Val Asp Lys Asn Ala Pro Val Val Ala Pro Gly Ile
 340 345 350
 Ile Lys Ser Ala Thr Phe Glu Ser Gly Thr Thr Glu Asp Trp Gln Ala
 355 360 365
 Arg Gly Thr Gly Val Thr Val Ser Val Val Asn Thr Val Ala His Thr
 370 375 380
 Gly Ser Lys Ser Leu Tyr Val Thr Gly Arg Ser Gln Asn Trp His Gly
 385 390 395 400
 Ala Glu Ile Asp Leu Thr Asn Val Leu Glu Lys Gly Lys Glu Tyr Gln
 405 410 415
 Phe Ser Val Trp Val Tyr Gln Asp Ser Gly Ser Asp Gln Lys Leu Thr
 420 425 430
 Leu Thr Met Gln Arg Lys Asn Ala Asp Asn Thr Thr Asp Tyr Asp Ser
 435 440 445
 Ile Lys Tyr Gln Gln Thr Val Ala Thr Asn Thr Trp Val Glu Leu Thr

450	Gly	Ser	Tyr	Thr	Val	Pro	Thr	Thr	Ala	Thr	Gln	Leu	Ile	Leu	Tyr	Val
465	Glu	Ala	Ala	Asp	Thr	Thr	Leu	Ser	Phe	Tyr	Ile	Asp	Asp	Phe	Thr	Ala
	Val	Asp	Lys	Asn	Pro	Glu	Val	Ile	Pro	Thr	Val	Ser	Arg	Val	Pro	Glu
	Trp	Glu	Ile	Pro	Ser	Leu	Phe	Glu	Gln	Tyr	Thr	Asn	Tyr	Phe	Ser	Ile
	Gly	Val	Ala	Ile	Pro	Tyr	Lys	Val	Leu	Thr	Asn	Pro	Thr	Glu	Lys	Ala
	Met	Val	Leu	Lys	His	Phe	Asn	Ser	Ile	Thr	Ala	Glu	Asn	Glu	Met	Lys
	Pro	Asp	Ala	Ile	Gln	Lys	Thr	Glu	Gly	Asn	Phe	Thr	Phe	Asn	Val	Ala
	Asp	Gln	Tyr	Val	Asp	Phe	Ala	Gln	Gln	Asn	Arg	Ile	Gly	Ile	Arg	Gly
	His	Thr	Leu	Val	Trp	His	Gln	Gln	Thr	Pro	Asn	Trp	Phe	Phe	Gln	His
	Ser	Asp	Gly	Thr	Pro	Leu	Asp	Pro	Ser	Asn	Pro	Ala	Asp	Lys	Gln	Leu
	Leu	Arg	Asp	Arg	Leu	Arg	Thr	His	Ile	Gln	Thr	Leu	Val	Gly	Arg	Tyr
	Ala	Gly	Lys	Ile	Tyr	Ala	Trp	Asp	Val	Val	Asn	Glu	Ala	Ile	Asp	Glu
	Asn	Gln	Pro	Asp	Gly	Tyr	Arg	Arg	Ser	Glu	Trp	Tyr	Arg	Ile	Leu	Gly
	Pro	Thr	Asp	Thr	Asp	Gly	Ile	Pro	Glu	Tyr	Ile	Leu	Leu	Ala	Phe	
	Gln	Tyr	Ala	Arg	Glu	Ala	Asp	Pro	Asn	Thr	Lys	Leu	Phe	Tyr	Asn	Asp
	Tyr	Asn	Thr	Glu	Asn	Pro	Lys	Lys	Arg	Gln	Phe	Ile	Tyr	Asn	Leu	Val
	Lys	Lys	Leu	Lys	Glu	Arg	Gly	Leu	Ile	Asp	Gly	Val	Gly	Leu	Gln	Cys
	His	Ile	Asn	Val	Asp	Ser	Pro	Thr	Val	Lys	Glu	Ile	Glu	Asp	Thr	Ile
	Lys	Leu	Phe	Ser	Thr	Ile	Pro	Gly	Leu	Asp	Ile	His	Ile	Thr	Glu	Leu
	Asp	Ile	Ser	Val	Tyr	Thr	Ser	Ser	Gln	Arg	Tyr	Asp	Thr	Leu	Pro	
	Gln	Asp	Ile	Met	Ile	Lys	Gln	Ala	Leu	Lys	Phe	Lys	Glu	Leu	Phe	Glu
	Met	Leu	Lys	Arg	Tyr	Ser	Tyr	Val	Val	Thr	Asn	Val	Thr	Phe	Trp	Gly
	Leu	Lys	Asp	Asp	Tyr	Ser	Trp	Leu	Ser	Thr	Ser	Arg	Ser	Asn	Trp	Pro
	Leu	Leu	Phe	Asp	Asn	Asn	Tyr	Gln	Ala	Lys	Phe	Ala	Tyr	Trp	Ala	Ile
	Val	Glu	Pro	Ser	Val	Leu	Pro	Leu	Ala	Ile	Asn	Lys	Gly	Tyr	Ala	Asn
	Asn	Ala	Ser	Ala	Arg	Ile	Asp	Gly	Val	Leu	Asp	Arg	Glu	Tyr	Lys	Gly
	Ala	Ile	Pro	Ile	Lys	Ile	Thr	Asn	Glu	Ser	Gly	Gln	Glu	Val	Ala	Thr
	Val	Arg	Ala	Leu	Trp	Asn	Ser	Ser	Glu	Leu	Ser	Leu	Tyr	Ile	Ser	Val
	Asn	Asp	Thr	Thr	Ile	Asp	Ala	Ala	Asn	Asp	Lys	Val	Val	Val	Phe	Val
	Asp	Gln	Asp	Asn	Gly	Lys	Met	Pro	Glu	Ile	Lys	Pro	Asp	Asp	Tyr	Trp
	Val	Ser	Ile	Thr	Arg	Thr	Gly	Thr	Lys	Ala	Gln	Ser	Ala	Gln	Gly	Tyr
	Val	Lys	Asp	Tyr	Ala	Val	Val	Gln	Gln	Ala	Asn	Gly	Tyr	Val	Val	Glu
	Leu	Lys	Leu	Leu	Ile	Asn	Asn	Thr	Leu	Thr	Val	Asn	Ser	Ser	Ile	Gly
	Phe	Asp	Ile	Ala	Ile	Phe	Asp	Asn	Gly	Val	Gln	Tyr	Ser	Trp	Asn	Asp

Lys Thr Asn Ser Gln Phe Ile Glu Thr Asp Asn Tyr Gly Ile Leu Thr
 1010 1015 1020
 Met Ala Asp Ser Val Lys Phe Ala Ser Ala Pro Lys Gly Thr Ala Ile
 1025 1030 1035 1040
 Ile Asp Ala Glu Leu Asp Asp Thr Trp Lys Asn Ala Gln Glu Ile Thr
 1045 1050 1055
 Thr Asp Thr Lys Val Thr Val Thr Gly Thr Val Tyr Asp Ser Ala Tyr
 1060 1065 1070
 Ala Lys Ala Lys Met Met Trp Asp Glu Asn Ser Ile Tyr Val Tyr Ala
 1075 1080 1085
 Ile Val Tyr Asp Leu Leu Leu Asn Lys Ala Asn Thr Asn Pro Trp Glu
 1090 1095 1100
 Gln Asp Ser Ile Glu Ile Phe Val Asp Glu Asn Asn His Lys Thr Pro
 1105 1110 1115 1120
 Tyr Tyr Glu Asn Asp Asp Val Gln Tyr Arg Val Asn Tyr Glu Asn Thr
 1125 1130 1135
 Gln Thr Phe Gly Thr Asn Gly Ala Pro Gln Asn Phe Ile Thr Ala Thr
 1140 1145 1150
 Lys Ile Ile Pro Asn Gly Tyr Ile Val Glu Ala Gln Val Tyr Met Arg
 1155 1160 1165
 Thr Thr Lys Leu Ser Glu Gly Met Val Ile Gly Phe Asp Ile Gln Val
 1170 1175 1180
 Asn Asp Ala Asp His Thr Gly Lys Arg Val Gly Val Leu Thr Trp Asn
 1185 1190 1195 1200
 Asp Lys Val Gly Asn Asn Tyr Arg Asp Thr Thr Arg Phe Arg Cys Leu
 1205 1210 1215
 Glu Leu Val Ala Ala Pro Val Ser Gln Pro Pro Ile Gln Ala Pro Ser
 1220 1225 1230
 Pro Ser Gln Pro Thr Thr Ile Thr Tyr Ile Leu Thr Pro Thr Pro Thr
 1235 1240 1245
 Gln Pro Ser Thr Gln Thr Gln Gln Pro Ala Gln Gln Pro Ser Gln
 1250 1255 1260
 Gln Gln Gln Gln Pro Gln Gln Gln Gln Pro Ala Gln Thr Gln Gln Pro
 1265 1270 1275 1280
 Gln Thr Gln Pro Ala Gln Lys Pro Gln Asn Val Val Ser Ile Lys Ile
 1285 1290 1295
 Asp Gln Thr Lys Ala Glu Thr Phe Thr Val Gly Ala Asp Thr Lys Val
 1300 1305 1310
 Val Val Pro Gln Gly Ser Val Thr Gly Ala Asn
 1315 1320

<210> 313
 <211> 1392
 <212> DNA
 <213> Bacteria

<400> 313
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 cccatcgacc gattcggctt ctccatggcc ttccagcggg ccgacctgct gcacggcgcg 180
 cgcggcctca gccccgccaa gcggcgcgag gtgctcgacc tgctgctcga caaggagagg 240
 ggcgcggggc tgtcgatcct gcgcctgggc atcgggtcgt cgaccgaccg ggtctacgac 300
 cacatgccga cgatcctgcc gaccgatccc ggcggggcgg acgccccgcc gaagtacgtc 360
 tgggacggct gggacggcgg ccaggtctgg ctgcgcaagg aggccaaggc gtacggcgctc 420
 aagcggttct tcgccgacgc ctggagcgcg ccggccttca tgaagaccaa cggcagcgag 480
 aacgacggcg gcgagctccg gcccgaatgg cgccaggcct acgcgaacta cctcgtcaag 540
 tacgcgaagt tctaccaacg ggaaggcatc ccgatcaccg acctgggggtt caccaacgaa 600
 cccgactggg cggcgacctc cgctcgtatg cgtttcaccc cgcagcaggc cgtcgacttc 660
 ctcaagggtg tcgggcccgc cgtccgcgcg ctccgactga agaccggcgt cgtctgctgc 720
 gacgcggcgg gctggggacc gcaggctcgcc tacaccgagg ccacgcgagg ggaccccgag 780
 gccgccaaagg ccgtgcggac cgtcaccggc caccgctaca gcggtccgac cacggtcccg 840
 cagcccaccg acaagcgggt ctggatgtcg gagtggtcac cggacggcac cacctggaac 900
 gagaactggg acgacggcag cggtacgac ggcctcaccg tcgccgccga catccagaac 960
 accctcaccg tcggccaacg caacgcctac gtctactgga ccggcgcgct cctcggcgcc 1020
 acccggggac tcatccagct cgccaacccc ggcgactcct accgggtgtc caagcggtag 1080
 tgggcgctgg ccgccttcag ccgcttcacg cgccccgacg ccgtccgcgt accggtcacg 1140
 aacgccgacc cggccctgag cgtcacggcc ttccgcaacg ccgacggcag ccgcgtgatc 1200
 gagatcctca acacggcgta caccgagaag tccgccctcg cggcggccac 1260
 gaccggcacc ccgaggggta cgtcaccgag gagaccgct cgatcacccc ggccacgctc 1320

gcctccgcgc gcggtacgac cctcaaggcc acgctcgccc cgcgcgcgct gaccacgac
gtcctcgact ga

1380
1392

<210> 314
<211> 463
<212> PRT
<213> Bacteria

<220>
<221> SIGNAL
<222> (1)...(22)

<400> 314

Met	Lys	Arg	Leu	Ser	Ala	Leu	Thr	Ala	Val	Val	Leu	Leu	Ala	Leu	Thr
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Thr	His	Val	Ala	Ala	Ala	Asp	Pro	Ala	Pro	Pro	Ala	Thr	Gly	Pro	Ala
			20					25					30		
Ile	Asp	Phe	Arg	Ala	Glu	Leu	Gln	Pro	Ile	Asp	Gly	Phe	Gly	Phe	Ser
		35					40					45			
Met	Ala	Phe	Gln	Arg	Ala	Asp	Leu	Leu	His	Gly	Ala	Arg	Gly	Leu	Ser
	50				55						60				
Pro	Ala	Lys	Arg	Arg	Glu	Val	Leu	Asp	Leu	Leu	Asp	Lys	Glu	Arg	
65					70				75					80	
Gly	Ala	Gly	Leu	Ser	Ile	Leu	Arg	Leu	Gly	Ile	Gly	Ser	Ser	Thr	Asp
				85					90					95	
Arg	Val	Tyr	Asp	His	Met	Pro	Thr	Ile	Leu	Pro	Thr	Asp	Pro	Gly	Gly
			100					105					110		
Pro	Asp	Ala	Pro	Pro	Lys	Tyr	Val	Trp	Asp	Gly	Trp	Asp	Gly	Gly	Gln
		115					120					125			
Val	Trp	Leu	Ala	Lys	Glu	Ala	Lys	Ala	Tyr	Gly	Val	Lys	Arg	Phe	Phe
	130					135					140				
Ala	Asp	Ala	Trp	Ser	Ala	Pro	Ala	Phe	Met	Lys	Thr	Asn	Gly	Ser	Glu
145					150					155					160
Asn	Asp	Gly	Gly	Glu	Leu	Arg	Pro	Glu	Trp	Arg	Gln	Ala	Tyr	Ala	Asn
				165					170					175	
Tyr	Leu	Val	Lys	Tyr	Ala	Lys	Phe	Tyr	Gln	Arg	Glu	Gly	Ile	Pro	Ile
			180					185					190		
Thr	Asp	Leu	Gly	Phe	Thr	Asn	Glu	Pro	Asp	Trp	Ala	Ala	Thr	Tyr	Ala
		195					200					205			
Ser	Met	Arg	Phe	Thr	Pro	Gln	Ala	Val	Asp	Phe	Leu	Lys	Val	Leu	
	210					215				220					
Gly	Pro	Thr	Val	Arg	Ala	Ser	Gly	Leu	Lys	Thr	Gly	Val	Val	Cys	Cys
225					230					235					240
Asp	Ala	Ala	Gly	Trp	Asp	Arg	Gln	Val	Ala	Tyr	Thr	Glu	Ala	Ile	Glu
				245					250					255	
Ala	Asp	Pro	Glu	Ala	Ala	Lys	Ala	Val	Arg	Thr	Val	Thr	Gly	His	Arg
			260					265					270		
Tyr	Ser	Gly	Pro	Thr	Thr	Val	Pro	Gln	Pro	Thr	Asp	Lys	Arg	Val	Trp
		275					280					285			
Met	Ser	Glu	Trp	Ser	Pro	Asp	Gly	Thr	Thr	Trp	Asn	Glu	Asn	Trp	Asp
	290					295					300				
Asp	Gly	Ser	Gly	Tyr	Asp	Gly	Leu	Thr	Val	Ala	Ala	Asp	Ile	Gln	Asn
305					310					315				320	
Thr	Leu	Thr	Val	Gly	Asn	Ala	Asn	Ala	Tyr	Val	Tyr	Trp	Thr	Gly	Ala
				325					330					335	
Ser	Leu	Gly	Ala	Thr	Arg	Gly	Leu	Ile	Gln	Leu	Ala	Asn	Pro	Gly	Asp
			340					345					350		
Ser	Tyr	Arg	Val	Ser	Lys	Arg	Tyr	Trp	Ala	Leu	Ala	Ala	Phe	Ser	Arg
		355					360					365			
Phe	Ile	Arg	Pro	Asp	Ala	Val	Arg	Val	Pro	Val	Thr	Asn	Ala	Asp	Pro
		370				375					380				
Ala	Leu	Ser	Val	Thr	Ala	Phe	Arg	Asn	Thr	Asp	Gly	Ser	Arg	Val	Ile
					390					395					400
Glu	Ile	Leu	Asn	Thr	Ala	Thr	Thr	Glu	Lys	Ser	Ala	Gln	Phe	Ala	Leu
				405					410					415	
Arg	Gly	Gly	His	Asp	Arg	His	Pro	Glu	Gly	Tyr	Val	Thr	Asp	Glu	Thr
			420					425					430		
Arg	Ser	Ile	Thr	Pro	Ala	His	Val	Ala	Ser	Ala	Arg	Gly	Thr	Thr	Leu
		435					440					445			

Lys Ala Thr Leu Ala Pro Arg Ala Leu Thr Thr Ile Val Leu Asp
 450 455 460

<210> 315
 <211> 1224
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<400> 315
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 agcgcattga atgccccaca attggatcaa gcctacaaaa acgagttcac gattggtgcg 180
 gcagtagaac cttatcaact acaaaatgaa aaagacgtac aaatgctaaa gcgccacttc 240
 aacagcattg ttgccgagaa cgtaatgaaa ccgacagca ttcaacctga ggaaggaaaa 300
 ttcaattttg aacaagcggg tcgaattgtg aagttcgcta aggcaaatgg catggatatt 360
 cgcttccata cactcgtttg gcacagccaa gtacctcaat ggttctttct tgacaaggaa 420
 ggcaagccaa tggttaatga aacagatcca gtgaaacgtg aacaaaataa acaactgctg 480
 ttaaaacgac ttgaaactca tattaaaacg atcgtcgagc ggtacaaaga tgacattaag 540
 tactgggacg ttgtaaatga ggttgtgggg gacgacggaa aactgcgcaa ctctccatgg 600
 tatcaaatcg ccggcatcga ttatattaaa gtggcattcc aaacagcgag aaaatatggc 660
 ggcaacaaga ttaaaactta tatcaatgat tacaataccg aagtggaaac aaagcgaagc 720
 gctctttata acttggtgaa gcaattaaaa gaagagggcg ttcctattga cggcatcggc 780
 catcaatccc acattcaaat cggctggcct tctgaagcag aaatcgagaa aacgattaac 840
 atgttcgccg ctctcggctt agacaaccaa atcactgagc ttgatgtgag catgtacggt 900
 tggccgcccgc gcgcttaccg gacgtatgac gccattccaa aacaaaagtt tttggatcag 960
 gcagcgcgct atgatcgttt gttcaaactg tatgaaaagt tgagcgataa aattagcaac 1020
 gtcaccttct ggggcatcgc cgacaatcat acgtggctcg acagccgtgc ggatgtgtac 1080
 tatgacgcca acgggaatgt tgtggttgac ccgaacgctc cgtacgcaaa agtggaaaaa 1140
 gggaaaaggaa aagatgcgcc gttcgttttt ggaccggatt acaaaagtcaa acccgcatat 1200
 tgggctatta tcgaccacaa atag 1224

<210> 316
 <211> 407
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<221> SIGNAL
 <222> (1)...(28)

<400> 316
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 Leu Leu Leu Pro Met Gly Met Thr Ala Thr Ser Ala Lys Asn Ala Asp
 20 25 30
 Ser Tyr Ala Lys Lys Pro His Ile Ser Ala Leu Asn Ala Pro Gln Leu
 35 40 45
 Asp Gln Arg Tyr Lys Asn Glu Phe Thr Ile Gly Ala Ala Val Glu Pro
 50 55 60
 Tyr Gln Leu Gln Asn Glu Lys Asp Val Gln Met Leu Lys Arg His Phe
 65 70 75 80
 Asn Ser Ile Val Ala Glu Asn Val Met Lys Pro Ile Ser Ile Gln Pro
 85 90 95
 Glu Glu Gly Lys Phe Asn Phe Glu Gln Ala Asp Arg Ile Val Lys Phe
 100 105 110
 Ala Lys Ala Asn Gly Met Asp Ile Arg Phe His Thr Leu Val Trp His
 115 120 125
 Ser Gln Val Pro Gln Trp Phe Phe Leu Asp Lys Glu Gly Lys Pro Met
 130 135 140
 Val Asn Glu Thr Asp Pro Val Lys Arg Glu Gln Asn Lys Gln Leu Leu
 145 150 155 160
 Leu Lys Arg Leu Glu Thr His Ile Lys Thr Ile Val Glu Arg Tyr Lys
 165 170 175
 Asp Asp Ile Lys Tyr Trp Asp Val Val Asn Glu Val Val Gly Asp Asp

Gly	Lys	Leu	Arg	Asn	Ser	Pro	Trp	Tyr	Gln	Ile	Ala	Gly	Ile	Asp	Tyr
		180						185				190			
Ile	Lys	Val	Ala	Phe	Gln	Thr	Ala	Arg	Lys	Tyr	Gly	Gly	Asn	Lys	Ile
Lys	Leu	Tyr	Ile	Asn	Asp	Tyr	Asn	Thr	Glu	Val	Glu	Pro	Lys	Arg	Ser
Ala	Leu	Tyr	Asn	Leu	Val	Lys	Gln	Leu	Lys	Glu	Glu	Gly	Val	Pro	Ile
Asp	Gly	Ile	Gly	His	Gln	Ser	His	Ile	Gln	Ile	Gly	Trp	Pro	Ser	Glu
Ala	Glu	Ile	Glu	Lys	Thr	Ile	Asn	Met	Phe	Ala	Ala	Leu	Gly	Leu	Asp
Asn	Gln	Ile	Thr	Glu	Leu	Asp	Val	Ser	Met	Tyr	Gly	Trp	Pro	Pro	Arg
Ala	Tyr	Pro	Thr	Tyr	Asp	Ala	Ile	Pro	Lys	Gln	Lys	Phe	Leu	Asp	Gln
Ala	Ala	Arg	Tyr	Asp	Arg	Leu	Phe	Lys	Leu	Tyr	Glu	Lys	Leu	Ser	Asp
Lys	Ile	Ser	Asn	Val	Thr	Phe	Trp	Gly	Ile	Ala	Asp	Asn	His	Thr	Trp
Leu	Asp	Ser	Arg	Ala	Asp	Val	Tyr	Tyr	Asp	Ala	Asn	Gly	Asn	Val	Val
Val	Asp	Pro	Asn	Ala	Pro	Tyr	Ala	Lys	Val	Glu	Lys	Gly	Lys	Gly	Lys
Asp	Ala	Pro	Phe	Val	Phe	Gly	Pro	Asp	Tyr	Lys	Val	Lys	Pro	Ala	Tyr
Trp	Ala	Ile	Ile	Asp	His	Lys									

<210> 317
 <211> 1695
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<400> 317															
gtggctggaa	gctcgtcac	gagcaacggc	ctctcggcca	ttctctcgct	ccagtcggac										60
tggggcagcg	gttactgcgc	gacggtagaa	cttcagaacg	tcggcgggaa	tccgatcacg										120
gcgtgggagg	tccaggtgga	gctcgtcggg	acgaccgtga	acagcagcca	cagcgcggcg										180
ttctcctcga	caggcaccgc	cctggctcgc	aagcccttgt	cctggaacgc	gacgctggca										240
cccgccgcca	agacgacctt	cggcttctgc	gcgccgcgtc	cgagcgcagc	ggcgcgcccc										300
tccgtggtgc	aagtgcacgc	gaacggctcc	gccaccggaa	cgggcgggaa	gagcggcggc										360
ggcacggggc	gctcgcaccg	tacggggcgc	tcgaccgcta	cgggcggctc	cggtgggtcg										420
accgcgggag	tgtgcgcggc	aacctacgag	gccgagagca	tgctccacag	caccggcaac										480
gccatcagcg	gcggctggaa	catctattcg	aacggcaaca	tcaccgccac	gcactccttc										540
gcagccggct	cgaatcgact	caccgtgcac	gccaaagggc	accaggccaa	cggggcgccc										600
atcatgcgcg	tcagcgtggg	caacaccgtc	gtcggcgagg	tgccagtgcc	ggtgaccgtg										660
tggacaccgt	actgcttcga	ctacgcgcgc	gcgagcgagc	gcgcgcagac	cgtcaagatc										720
gagttcacga	acgactacaa	tggcggcacc	ggcgccgacc	gcaatctgca	cgtggacaag										780
gtcgcgggtg	agtgcggcgc	gagctgcaac	agcgggagcg	gagggggcac	cggcggtctg										840
agcgggaagc	gcggcacctc	ggccaccggc	ggctccgcca	gcgggtggcg	ggcagggacg										900
acctgcacga	acgttcgtcc	cactggaacc	gactgggacg	cggcgacctg	cgacatgtgg										960
gcctcgcaaa	ctagcgaagt	cagcgcgggc	tggatgatcg	acaaccatta	ctgcgaccag										1020
agctgcgggc	gctgctcggg	cgggagcggg	accggtggca	cgaacacggg	aggcaccggc										1080
ggtggagtg	ccccgagtag	ctgcacggag	cccaattctc	agcagtgtct	cacctacaag										1140
gtcgggactg	actgcggcct	cacctacgag	atctggaccg	acggctccgc	gggctgcatg										1200
acgaacacct	cctacgggtt	cctcgccaat	tggagccagg	ggaacgcaaa	ctacctggct										1260
cgcaagggcg	ttcggcccgg	ctcgtcgcga	ccggtcgtga	cgtacagcgc	gaactaccag										1320
ccgaacggga	attcctacct	ggggatctac	ggttggacgc	agaacccgct	cgtcgagtag										1380
tacatcatcg	atagctgggg	gagctggcgt	ccaccgggga	cccaggcgat	gggcaccgtc										1440
caggtggacg	gcgggacctg	cgatatctac	cggagcgagc	gggtgaacaa	gccctcgatc										1500
gagggcaaca	agaccttctg	gcagtactgg	agcgtccgca	cccagaagcg	caccagtggg										1560
accatcaccg	tggctccgca	cttcgccgcg	tgggcggcat	ccggaactga	gatgggctcc										1620
ttctacgagg	tctccctggt	ggtggagggc	tacaacagct	ccggcagcgc	cgacgtaacg										1680
gtgtcgttcc	ggtag														1695

<210> 318
 <211> 564
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<400> 318
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 1 5 10 15
 Leu Gln Ser Asp Trp Gly Ser Gly Tyr Cys Ala Thr Val Glu Leu Gln
 20 25 30
 Asn Val Gly Thr Pro Ile Thr Ala Trp Glu Val Gln Val Glu Leu
 35 40 45
 Ala Gly Thr Thr Val Asn Ser Ser His Ser Ala Ala Phe Ser Ser Thr
 50 55 60
 Gly Thr Arg Leu Val Ala Lys Pro Leu Ser Trp Asn Ala Thr Leu Ala
 65 70 75 80
 Pro Ala Ala Lys Thr Thr Phe Gly Phe Cys Ala Ala Ala Pro Ser Ala
 85 90 95
 Ala Ala Arg Pro Ser Val Val Gln Val Thr Ala Asn Gly Ser Ala Thr
 100 105 110
 Gly Thr Gly Gly Thr Ser Gly Gly Gly Thr Gly Gly Ser Thr Ala Thr
 115 120 125
 Gly Gly Ser Thr Ala Thr Gly Gly Ser Gly Gly Ser Thr Ala Gly Val
 130 135 140
 Cys Ala Ala Thr Tyr Glu Ala Glu Ser Met Leu His Ser Thr Gly Asn
 145 150 155 160
 Ala Ile Ser Gly Gly Trp Asn Ile Tyr Ser Asn Gly Asn Ile Thr Ala
 165 170 175
 Thr His Ser Phe Ala Ala Gly Ser Asn Arg Leu Thr Val His Ala Lys
 180 185 190
 Gly Asp Gln Ala Asn Gly Ala Pro Ile Met Arg Val Ser Val Gly Asn
 195 200 205
 Thr Val Val Gly Glu Val Pro Val Pro Val Thr Val Trp Thr Pro Tyr
 210 215 220
 Cys Phe Asp Tyr Ala Ala Ala Ser Ala Gly Ala Gln Thr Val Lys Ile
 225 230 235 240
 Glu Phe Thr Asn Asp Tyr Asn Gly Gly Thr Gly Ala Asp Arg Asn Leu
 245 250 255
 His Val Asp Lys Val Ala Val Gln Cys Gly Ala Ser Cys Asn Ser Gly
 260 265 270
 Ser Gly Gly Gly Thr Gly Gly Ser Ser Gly Ser Gly Gly Thr Ser Ala
 275 280 285
 Thr Gly Gly Ser Ala Ser Gly Gly Ala Ala Gly Thr Thr Cys Thr Asn
 290 295 300
 Val Arg Pro Thr Gly Thr Asp Trp Asp Ala Ala Thr Cys Asp Met Trp
 305 310 315 320
 Ala Ser Gln Thr Ser Glu Cys Ser Ala Ala Trp Met Ile Asp Asn His
 325 330 335
 Tyr Cys Asp Gln Ser Cys Gly Arg Cys Ser Gly Gly Ser Gly Thr Gly
 340 345 350
 Gly Thr Asn Thr Gly Gly Thr Gly Gly Val Thr Pro Ser Thr Cys
 355 360 365
 Thr Glu Pro Asn Ser Gln Gln Cys Ser Thr Tyr Lys Val Gly Thr His
 370 375 380
 Cys Gly Leu Thr Tyr Glu Ile Trp Thr Asp Gly Ser Ala Gly Cys Met
 385 390 395 400
 Thr Asn Thr Ser Tyr Gly Phe Leu Ala Asn Trp Ser Gln Gly Asn Ala
 405 410 415
 Asn Tyr Leu Ala Arg Lys Gly Val Arg Pro Gly Ser Ser Arg Pro Val
 420 425 430
 Val Thr Tyr Ser Ala Asn Tyr Gln Pro Asn Gly Asn Ser Tyr Leu Gly
 435 440 445
 Ile Tyr Gly Trp Thr Gln Asn Pro Leu Val Glu Tyr Tyr Ile Ile Asp
 450 455 460
 Ser Trp Gly Ser Trp Arg Pro Pro Gly Thr Gln Ala Met Gly Thr Val
 465 470 475 480

Gln Val Asp Gly Gly Thr Tyr Asp Ile Tyr Arg Ser Glu Arg Val Asn
 485 490 495
 Lys Pro Ser Ile Glu Gly Asn Lys Thr Phe Trp Gln Tyr Trp Ser Val
 500 505 510
 Arg Thr Gln Lys Arg Thr Ser Gly Thr Ile Thr Val Ala Pro His Phe
 515 520 525
 Ala Ala Trp Ala Ala Ser Gly Leu Gln Met Gly Ser Phe Tyr Glu Val
 530 535 540
 Ser Leu Val Val Glu Gly Tyr Asn Ser Ser Gly Ser Ala Asp Val Thr
 545 550 555 560
 Val Ser Phe Arg

<210> 319
 <211> 1095
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<400> 319
 atgaagggtga cccgaacagc tgtcgcgggc attgtcgccg cagcgggtcct catcacgatac 60
 ggcacgtcga ccgcgtcggc tgaggatgaa ccaaccagcg agaacacgtc gacggatcag 120
 ccgttgccgcg tcctggcagc caaagccggg atcgcggttcg gcacggccgt cgacatgaac 180
 gcgtacaaca acgacgcgac ctaccgtgag ctcgctcgcc aggagttctc gagcgtcacg 240
 gccgagaacg tcatgaagtg gcagctcctc gagccgcagc gaggggtcta caactggggg 300
 ccggccgacg agctcgtgcg cgtagccaac gagaacggcc agaagggtgcg cgggcacacg 360
 ctcatctggc acaaccagct gcccacctgg cttaccagcg gagtcgcctc cgggtgagatc 420
 acaccggacg agctccggca gtccttgagg aaccacatct tcacgggtgat gcgccacttc 480
 aagggcgaga tccaccagtg ggatgtcgcc aacgaggtca tcgacgacag cggcaacctg 540
 cgcaacacga tctggctgca gaacctgggt ccgagctaca tcgcggaacg gttccggtgg 600
 gctcgcaagg ccgacccgga cgccgccctc tatctgaacg actacaacgt cgagggcccg 660
 aacgccaaag ccgatgcgta ctacgccctg gtcaagcagc tcctcgccga cgacgtgccg 720
 gtggacggct tcggaataca ggggcacctc ggtgtgcagt tcggcttctg gcccgcgagt 780
 gcggtggccg acaacatggg gcgcttcgag gcactcggcc tgcagacggc ggtcaccgag 840
 gcggatgtcc ggatgatcat gccgccgcag gaggacaagc tggccgcaca ggcacgtggc 900
 tacagcacgt tgggtccagg ctgcctgatg gccaaagcgtt gcaggtcgtt caccgtctgg 960
 ggcttcaccg acaagtactc ctgggttccg ggcaccttcc ccggccaggg cgcggcgaac 1020
 ctctggccg aggacttcca gccaagccg gcttactacg ccgtccagga tgacctcgcg 1080
 cgcgccggac ggtag 1095

<210> 320
 <211> 364
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<221> SIGNAL
 <222> (1)...(27)

<400> 320
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 Leu Ile Thr Ile Gly Thr Ser Thr Ala Ser Ala Glu Asp Glu Pro Thr
 20 25 30
 Ser Glu Asn Thr Ser Thr Asp Gln Pro Leu Arg Val Leu Ala Ala Lys
 35 40 45
 Ala Gly Ile Ala Phe Gly Thr Ala Val Asp Met Asn Ala Tyr Asn Asn
 50 55 60
 Asp Ala Thr Tyr Arg Glu Leu Val Gly Gln Glu Phe Ser Ser Val Thr
 65 70 75 80
 Ala Glu Asn Val Met Lys Trp Gln Leu Leu Glu Pro Gln Arg Gly Val
 85 90 95
 Tyr Asn Trp Gly Pro Ala Asp Gln Leu Val Arg Val Ala Asn Glu Asn
 100 105 110
 Gly Gln Lys Val Arg Gly His Thr Leu Ile Trp His Asn Gln Leu Pro
 Page 241

Thr	Trp	Leu	Thr	Ser	Gly	Val	Ala	Ser	Gly	Glu	Ile	Thr	Pro	Asp	Glu
130						115	120				125				
Leu	Arg	Gln	Leu	Leu	Arg	Asn	His	Ile	Phe	Thr	Val	Met	Arg	His	Phe
145					150					155					160
Lys	Gly	Glu	Ile	His	Gln	Trp	Asp	Val	Ala	Asn	Glu	Val	Ile	Asp	Asp
				165					170					175	
Ser	Gly	Asn	Leu	Arg	Asn	Thr	Ile	Trp	Leu	Gln	Asn	Leu	Gly	Pro	Ser
			180					185					190		
Tyr	Ile	Ala	Asp	Ala	Phe	Arg	Trp	Ala	Arg	Lys	Ala	Asp	Pro	Asp	Ala
		195					200					205			
Ala	Leu	Tyr	Leu	Asn	Asp	Tyr	Asn	Val	Glu	Gly	Pro	Asn	Ala	Lys	Ala
		210				215					220				
Asp	Ala	Tyr	Tyr	Ala	Leu	Val	Lys	Gln	Leu	Leu	Ala	Asp	Asp	Val	Pro
225					230					235					240
Val	Asp	Gly	Phe	Gly	Ile	Gln	Gly	His	Leu	Gly	Val	Gln	Phe	Gly	Phe
				245					250					255	
Trp	Pro	Ala	Ser	Ala	Val	Ala	Asp	Asn	Met	Gly	Arg	Phe	Glu	Ala	Leu
			260					265					270		
Gly	Leu	Gln	Thr	Ala	Val	Thr	Glu	Ala	Asp	Val	Arg	Met	Ile	Met	Pro
		275					280					285			
Pro	Asp	Glu	Asp	Lys	Leu	Ala	Gln	Ala	Arg	Gly	Tyr	Ser	Thr	Leu	
		290				295				300					
Val	Gln	Gly	Cys	Leu	Met	Ala	Lys	Arg	Cys	Arg	Ser	Phe	Thr	Val	Trp
305					310					315					320
Gly	Phe	Thr	Asp	Lys	Tyr	Ser	Trp	Val	Pro	Gly	Thr	Phe	Pro	Gly	Gln
				325					330					335	
Gly	Ala	Ala	Asn	Leu	Ala	Glu	Asp	Phe	Gln	Pro	Lys	Pro	Ala	Tyr	
			340				345					350			
Tyr	Ala	Val	Gln	Asp	Asp	Leu	Ala	Arg	Ala	Gly	Arg				
		355					360								

<210> 321

<211> 1608

<212> DNA

<213> Unknown

<220>

<223> obtained from an environmental sample.

<400> 321

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cgccacgtcg	gcgtgatcga	ggggcagaaa	tgctgggatg	aatgggttgg	cccgatgatt	180
gatctgtctca	aacgtcgccc	cgaaatcaag	gccacggcct	atatcaactg	ggaatggcgc	240
gagtgttcgcg	accgcctcgg	cttccgctgg	cacaactggg	gcgacgcccc	catcgagggc	300
aacgcccttg	ttcgtgatcg	ctgggtgcag	gaactctccc	accccatcta	tctccacgcg	360
gcgcgcgcag	gatcttgtcc	gctgcccga	atcaccgccc	tcccatccgc	gaccccgctc	420
ctccagaccg	tgttccagga	ccatttcctg	atgggtgctg	ccttgaatgt	gaggcagttc	480
accgaaaacg	acgcaacca	gaccgctctc	atcaagaagc	aattcaacac	catcacgccc	540
gagaatgttc	tcaagtgggg	gccggttcac	cctgagccca	accggttcaa	cttcgaatcc	600
accgatcggt	acgtggactt	tggtgtgaag	aaccggatgt	tcatcgctcg	ccacaccctc	660
gtctggcacc	accagacacc	cgctgggtg	tttcaagatt	cccaaggcca	gccgctcgac	720
cgggatggac	tgctcaatcg	cttgagcaac	cacatccaca	cggtggttgg	acgctacaag	780
ggccgcatcc	acgggtggga	tatggtgaac	gaggccttga	acgatgacgg	cacctccgc	840
cctagccaat	ggcttaaaat	catcgcccc	gactacattg	ccaaagcggt	tgcccttgcc	900
cacgcccgcg	accctgccc	tgaactgtat	tacaacgatt	acagtctcga	tcatcccgcc	960
aagtgtgctg	gtgcgatcgc	gctggtgaag	cagctccaga	cgaatggcat	atccattgcc	1020
gggattggca	cgcagaccga	cgtcggactc	aacggacctt	ccccccagtc	ggtggatgat	1080
tcattgacgg	cctttggcca	gctcggcgtg	aaggatcatg	ttaccgaact	cgacgttgat	1140
gtgtgccccg	ccgccagcca	aaatcaaaac	gcggatctca	accagcccgc	cttgtccaat	1200
cccgcctcta	atccccgcct	caatccctat	cccgatgggc	tgccgcaagc	cgccaggac	1260
aaactggccg	ctcgtactgc	ggaactcttc	gccgtgttcg	tcaagcacgc	cgacaaaatc	1320
agccgcgtca	cgctctgggtg	cgtaaccgac	ggcgactcct	ggctgaacaa	ctggcccgtg	1380
cgtggccgcg	tcaactatcc	gctgctgttc	gaccgtgcca	gccagcccaa	gcccgccttc	1440
gatgcggtca	ttcgcgctgc	caaggacccg	ccgacggttt	cgcacaaatc	caccccgcctc	1500
cacgatgcgg	cgcggtcct	ggtcaatccg	cacaagggct	ggtaccacca	ctaccgggac	1560
aatcacatca	acaagtatga	gatcgccgcg	gatgccgacc	tgacggaa		1608

<210> 322
 <211> 536
 <212> PRT
 <213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 322

```

Met Asp Trp Trp Asp Val Asp Ile Phe Ser Ala Lys Glu Ile Thr His
 1      5      10      15
Pro Gln Leu Ala Thr Phe Leu Asp Ala Ser Arg Asp His Arg Lys Pro
      20      25      30
Val Met Ile Gly Glu Met Thr Pro Arg His Val Gly Val Ile Glu Gly
      35      40      45
Gln Lys Cys Trp Asp Glu Trp Phe Gly Pro Met Ile Asp Leu Leu Lys
      50      55      60
Arg Arg Pro Glu Ile Lys Ala Thr Ala Tyr Ile Asn Trp Glu Trp Arg
65      70      75      80
Glu Trp Ser Asp Arg Leu Gly Phe Arg Trp His Asn Trp Gly Asp Ala
      85      90      95
Arg Ile Glu Gly Asn Ala Leu Val Arg Asp Arg Trp Val Gln Glu Leu
      100      105      110
Ser His Pro Ile Tyr Leu His Ala Ala Arg Asp Gly Ser Cys Pro Leu
      115      120      125
Pro Pro Ile Thr Ala Leu Pro Ser Ala Thr Pro Ser Leu Gln Thr Val
130      135      140
Phe Gln Asp His Phe Leu Met Gly Ala Ala Leu Asn Val Arg Gln Phe
145      150      155      160
Thr Glu Asn Asp Ala Thr Lys Thr Ala Leu Ile Lys Lys Gln Phe Asn
      165      170      175
Thr Ile Thr Pro Glu Asn Val Leu Lys Trp Gly Pro Val His Pro Glu
      180      185      190
Pro Asn Arg Phe Asn Phe Glu Ser Thr Asp Arg Tyr Val Asp Phe Gly
195      200      205
Val Lys Asn Arg Met Phe Ile Val Gly His Thr Leu Val Trp His His
210      215      220
Gln Thr Pro Ala Trp Val Phe Gln Asp Ser Gln Gly Gln Pro Leu Asp
225      230      235      240
Arg Asp Gly Leu Leu Asn Arg Leu Ser Asn His Ile His Thr Val Val
      245      250      255
Gly Arg Tyr Lys Gly Arg Ile His Gly Trp Asp Met Val Asn Glu Ala
260      265      270
Leu Asn Asp Asp Gly Thr Leu Arg Pro Ser Gln Trp Leu Lys Ile Ile
275      280      285
Gly Pro Asp Tyr Ile Ala Lys Ala Phe Ala Leu Ala His Ala Ala Asp
290      295      300
Pro Ala Ala Glu Leu Tyr Tyr Asn Asp Tyr Ser Leu Asp His Pro Ala
305      310      315      320
Lys Cys Ala Gly Ala Ile Ala Leu Val Lys Gln Leu Gln Thr Asn Gly
      325      330      335
Ile Ser Ile Ala Gly Ile Gly Thr Gln Thr His Val Gly Leu Asn Gly
      340      345      350
Pro Ser Pro Gln Ser Val Asp Asp Ser Leu Thr Ala Phe Gly Gln Leu
355      360      365
Gly Val Lys Val Met Val Thr Glu Leu Asp Val Asp Val Leu Pro Ala
370      375      380
Ala Ser Gln Asn Gln Asn Ala Asp Leu Asn Gln Pro Ala Leu Ser Asn
385      390      395      400
Pro Ala Leu Asn Pro Ala Leu Asn Pro Tyr Pro Asp Gly Leu Pro Gln
      405      410      415
Ala Val Gln Asp Lys Leu Ala Ala Arg Tyr Ala Glu Leu Phe Ala Val
420      425      430
Phe Val Lys His Ala Asp Lys Ile Ser Arg Val Thr Phe Trp Cys Val
435      440      445
Thr Asp Gly Asp Ser Trp Leu Asn Asn Trp Pro Val Arg Gly Arg Val
450      455      460
Asn Tyr Pro Leu Leu Phe Asp Arg Ala Ser Gln Pro Lys Pro Ala Phe
465      470      475      480

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Asp Ala Val Ile Arg Val Ala Lys Asp Pro Pro Thr Val Ser His Asn
 485 490 495
 Leu Thr Pro Leu His Asp Ala Ala Arg Val Leu Val Asn Pro His Lys
 500 505 510
 Gly Trp Tyr His His Tyr Pro Asp Asn His Ile Asn Lys Tyr Glu Ile
 515 520 525
 Ala Arg Asp Ala Asp Leu Thr Glu
 530 535

<210> 323
 <211> 2355
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<400> 323
 atgatgctca atgcccgttg tatccaactt atgaagttgt tgcttcgctc ttctctttat 60
 cttaccgctg acaaatgggc gcaatcattg aatgtatcca agcgaacgat ttattacgat 120
 atacaaaaaa cgaatgaatg gttgcatcat gaagggctga agccgattca atatgcgcgc 180
 gggctcggat ttcgcttgga tgatgaagtg aaacaagaaa taacaacaaa gtggaacaca 240
 ttacaacctg cccgacatta cacatatcag tcatgggagc gaaaagcttg gattgggtta 300
 tggattttga ctcgcgttca tccactgtat ttgtctgatt ttttagagaa attacatgta 360
 agcaggagca cgttggttaa tgacataaag gaactgaaag aagattggca gtcatttcag 420
 ttgcgattgt cattccatcg caaaaaaggg tatttttcat caggggaaga aatccaaaaa 480
 aggaaattga tgattcgta tattcatcaa atattagcgg cgatggatga ccagcatttc 540
 gctgcagaat tgtcagctga gtgtcaatgg ccaatctttg attggatttg ccaattcgag 600
 tctacttttt ctattcgcta taccggtgag gttattcaaa ctttacctat ttacctcgca 660
 ttgttccaaa gacggtgggc tagaggcaaa tttgtgcaaa tggacgagca agaaaaagaa 720
 gtgctaaggt caatgcggga ataccagatt gctgatcatc tcgttagacg aattgaaaac 780
 gtttccgaaa tatctattcc cgatgacgag gtttgttatt tgacgacca tttactcagt 840
 tttcgagttg cagatgacaa gcaaatcgat cataacgatg acatcactac tttgaaacga 900
 atcatttcgac atatggtgga tgattttcaa acttatgcct gtgtacaatt caagcgtcgc 960
 gaagagtttg aaaaaaattt attggttcat atgaagcctg cctattatcg actgaaatac 1020
 ggttttcatc tgcaaaacga tctgaccgaa tcggtcaaag cgaactatca agatttattt 1080
 accttaacga aaaaagtcgt ccatcattta gaaagtgtag ttggccagcc ggtcagcgac 1140
 gatgaaattg cttatatcgc catgcathtt ggcggatggt tggacagaga gggggtgtcg 1200
 gttccagtac ggaaaaaggt gttgatcgtc tgcgagagcg ggattggaac atcgcgaaatg 1260
 ttgcaaaaac aattggatca acgctacaaa aacgagttca cgatttgggtg ggcagtagaa 1320
 ctttatcaac taaaaaatga aaaagacgta caaatgctaa agcgccactt caacagcatt 1380
 gttgccgaga acgtaatgaa accgatcagc attcaacctg aggaaggaaa attcaatttt 1440
 gaacaagcgg atcgaattgt gaagttcgct aaggcaaatg gcatggatat tcgcttccat 1500
 acactcgttt ggcacagcca agtacctcaa tggttctttc ttgacaagga aggcaagcca 1560
 atggttaatg aaacagatcc agtgaacggt gaacaaaata aacaactgct gttaaaacga 1620
 cttgaaactc atattaaaac gatcgtcgag cggtaaaaag atgacattaa gtactgggac 1680
 gttgtaaatg aggttgtggg ggacgacgga aaactgcgca actctccatg gtatcaaatc 1740
 gccggcatcg attatattaa agtggcattc caaacagcga gaaaatatgg cggcaacaag 1800
 attaaacttt atatcaatga ttacaatacc gaagtggaaac caaagcgaag cgctctttat 1860
 aacttgggtga agcaattaaa agaagagggc gttcctattg acggcatcgg ccatcaatcc 1920
 cacattcaaa tcggctggcc ttctgaagca gaaatcgaga aaacgattaa catgttcgcc 1980
 gctctcggct tagacaacca aatcactgag cttgatgtga gcatgtacgg ttggccgccg 2040
 cgcgcttacc cgacgtatga cgccattcca aaacaaaagt ttttggatca ggcagcgcg 2100
 tatgatcgtt tgttcaaact gtatgaaaag ttgagcgata aaattagcaa cgtcaccttc 2160
 tggggcatcg ccgacaatca tacgtggctc gacagccgtg cggatgtgta ctatgacgcc 2220
 aacgggaatg ttgtgggtga cccgaacgct ccgtacgcaa aagtggaaaa agggaaagga 2280
 aaagatgcgc cgttcgtttt tggaccggat taaaaagtca aaccgcgata ttgggctatt 2340
 atcgaccaca aatag 2355

<210> 324
 <211> 784
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<400> 324
 Met Met Leu Asn Ala Arg Cys Ile Gln Leu Met Lys Leu Leu Leu Arg
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1				5				10				15				
Ser	Ser	Leu	Tyr	Leu	Thr	Ala	Asp	Lys	Leu	Ala	Gln	Ser	Leu	Asn	Val	
			20					25					30			
Ser	Lys	Arg	Thr	Ile	Tyr	Tyr	Asp	Ile	Gln	Lys	Thr	Asn	Glu	Trp	Leu	
		35					40					45				
His	His	Glu	Gly	Leu	Lys	Pro	Ile	Gln	Tyr	Ala	Arg	Gly	Leu	Gly	Phe	
	50					55				60						
Arg	Leu	Asp	Asp	Glu	Val	Lys	Gln	Glu	Ile	Thr	Thr	Lys	Trp	Asn	Thr	
65				70					75						80	
Leu	Gln	Pro	Ala	Arg	His	Tyr	Thr	Tyr	Gln	Ser	Trp	Glu	Arg	Lys	Ala	
				85				90						95		
Trp	Ile	Gly	Leu	Trp	Ile	Leu	Thr	Arg	Val	His	Pro	Leu	Tyr	Leu	Ser	
		100						105					110			
Asp	Phe	Leu	Glu	Lys	Leu	His	Val	Ser	Arg	Ser	Thr	Leu	Leu	Asn	Asp	
		115					120					125				
Ile	Lys	Glu	Leu	Lys	Glu	Asp	Trp	Gln	Ser	Phe	Gln	Leu	Arg	Leu	Ser	
	130					135					140					
Phe	His	Arg	Lys	Lys	Gly	Tyr	Phe	Ser	Ser	Gly	Glu	Glu	Ile	Gln	Lys	
145				150						155					160	
Arg	Lys	Leu	Met	Ile	Arg	Tyr	Ile	His	Gln	Ile	Leu	Ala	Ala	Met	Asp	
			165					170						175		
Asp	Gln	His	Phe	Ala	Ala	Glu	Leu	Ser	Ala	Glu	Cys	Gln	Trp	Pro	Ile	
		180						185					190			
Phe	Asp	Trp	Ile	Cys	Gln	Phe	Glu	Ser	Thr	Phe	Ser	Ile	Arg	Tyr	Thr	
	195						200					205				
Gly	Glu	Val	Ile	Gln	Thr	Leu	Pro	Ile	Tyr	Leu	Ala	Leu	Phe	Gln	Arg	
	210					215					220					
Arg	Trp	Ala	Arg	Gly	Lys	Phe	Val	Gln	Met	Asp	Glu	Gln	Glu	Lys	Glu	
225				230						235					240	
Val	Leu	Arg	Ser	Met	Arg	Glu	Tyr	Gln	Ile	Ala	Asp	His	Leu	Val	Arg	
			245					250						255		
Arg	Ile	Glu	Asn	Val	Ser	Glu	Ile	Ser	Ile	Pro	Asp	Asp	Glu	Val	Cys	
		260						265					270			
Tyr	Leu	Thr	Thr	His	Leu	Leu	Ser	Phe	Arg	Val	Ala	Asp	Asp	Lys	Gln	
	275						280					285				
Ile	Asp	His	Asn	Asp	Asp	Ile	Thr	Thr	Leu	Lys	Arg	Ile	Ile	Arg	His	
	290					295					300					
Met	Val	Asp	Asp	Phe	Gln	Thr	Tyr	Ala	Cys	Val	Gln	Phe	Lys	Arg	Arg	
305				310						315					320	
Glu	Glu	Leu	Glu	Lys	Asn	Leu	Leu	Val	His	Met	Lys	Pro	Ala	Tyr	Tyr	
			325					330						335		
Arg	Leu	Lys	Tyr	Gly	Phe	His	Leu	Gln	Asn	Asp	Leu	Thr	Glu	Ser	Val	
		340						345					350			
Lys	Ala	Asn	Tyr	Gln	Asp	Leu	Phe	Thr	Leu	Thr	Lys	Lys	Val	Val	His	
	355						360					365				
His	Leu	Glu	Ser	Val	Val	Gly	Gln	Pro	Val	Ser	Asp	Asp	Glu	Ile	Ala	
	370					375					380					
Tyr	Ile	Ala	Met	His	Phe	Gly	Gly	Trp	Leu	Asp	Arg	Glu	Gly	Val	Ser	
385				390						395					400	
Val	Pro	Val	Arg	Lys	Lys	Val	Leu	Ile	Val	Cys	Glu	Ser	Gly	Ile	Gly	
			405					410					415			
Thr	Ser	Arg	Met	Leu	Gln	Lys	Gln	Leu	Asp	Gln	Arg	Tyr	Lys	Asn	Glu	
		420						425					430			
Phe	Thr	Ile	Gly	Ala	Ala	Val	Glu	Pro	Tyr	Gln	Leu	Gln	Asn	Glu	Lys	
	435						440					445				
Asp	Val	Gln	Met	Leu	Lys	Arg	His	Phe	Asn	Ser	Ile	Val	Ala	Glu	Asn	
	450					455					460					
Val	Met	Lys	Pro	Ile	Ser	Ile	Gln	Pro	Glu	Glu	Gly	Lys	Phe	Asn	Phe	
465				470						475					480	
Glu	Gln	Ala	Asp	Arg	Ile	Val	Lys	Phe	Ala	Lys	Ala	Asn	Gly	Met	Asp	
			485					490					495			
Ile	Arg	Phe	His	Thr	Leu	Val	Trp	His	Ser	Gln	Val	Pro	Gln	Trp	Phe	
	500							505					510			
Phe	Leu	Asp	Lys	Glu	Gly	Lys	Pro	Met	Val	Asn	Glu	Thr	Asp	Pro	Val	
	515						520					525				
Lys	Arg	Glu	Gln	Asn	Lys	Gln	Leu	Leu	Leu	Lys	Arg	Leu	Glu	Thr	His	
	530					535					540					
Ile	Lys	Thr	Ile	Val	Glu	Arg	Tyr	Lys	Asp	Asp	Ile	Lys	Tyr	Trp	Asp	
545				550					555						560	

Val Val Asn Glu Val Val Gly Asp Asp Gly Lys Leu Arg Asn Ser Pro
 565 570 575
 Trp Tyr Gln Ile Ala Gly Ile Asp Tyr Ile Lys Val Ala Phe Gln Thr
 580 585 590
 Ala Arg Lys Tyr Gly Gly Asn Lys Ile Lys Leu Tyr Ile Asn Asp Tyr
 595 600 605
 Asn Thr Glu Val Glu Pro Lys Arg Ser Ala Leu Tyr Asn Leu Val Lys
 610 615 620
 Gln Leu Lys Glu Glu Gly Val Pro Ile Asp Gly Ile Gly His Gln Ser
 625 630 635 640
 His Ile Gln Ile Gly Trp Pro Ser Glu Ala Glu Ile Glu Lys Thr Ile
 645 650 655
 Asn Met Phe Ala Ala Leu Gly Leu Asp Asn Gln Ile Thr Glu Leu Asp
 660 665 670
 Val Ser Met Tyr Gly Trp Pro Pro Arg Ala Tyr Pro Thr Tyr Asp Ala
 675 680 685
 Ile Pro Lys Gln Lys Phe Leu Asp Gln Ala Ala Arg Tyr Asp Arg Leu
 690 695 700
 Phe Lys Leu Tyr Glu Lys Leu Ser Asp Lys Ile Ser Asn Val Thr Phe
 705 710 715 720
 Trp Gly Ile Ala Asp Asn His Thr Trp Leu Asp Ser Arg Ala Asp Val
 725 730 735
 Tyr Tyr Asp Ala Asn Gly Asn Val Val Asp Pro Asn Ala Pro Tyr
 740 745 750
 Ala Lys Val Glu Lys Gly Lys Gly Lys Asp Ala Pro Phe Val Phe Gly
 755 760 765
 Pro Asp Tyr Lys Val Lys Pro Ala Tyr Trp Ala Ile Asp His Lys
 770 775 780

<210> 325

<211> 1146

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 325

atgactat	ttt	cccgccg	gaa	at	ttatgtg	g	gcacagctg	cactcctggc	caccacccag	60
ctcaaaac	ccc	gcgctct	cg	cgctgccatg	gccagcacag	g	catcaagga	cgcccttcaag	120	
ggcgactt	cc	at	atcggcac	cgccatcagc	aacgctaccc	t	gcaaaacca	ggatgccacc	180	
atgctggat	t	gatcaag	cg	cgaattta	at	gcaattaccg	ctgaaaattg	catgaagtgg	240	
gagcctatt	c	gcccacag	ct	ggatcagtg	g	aattgggagc	tggccgaccg	ctttgtggat	300	
ttcggcgt	ta	aaaacaag	at	gtatgtggta	g	gtcacacgc	tgatttggca	cagccaggcg	360	
ccagcgcac	a	tttatctc	ga	cgccgatgg	t	aagcccaaca	gtcgcgatgc	ccagttgaaa	420	
gtaatggag	g	agcacata	cg	taccctggcg	g	ggccgctaca	aaggaaagat	agacgcctgg	480	
gacgtgggt	a	acgaagcag	t	ggaggatgat	g	ggcagctggc	gtcaaaccgg	ctggtacaaa	540	
aacatgggt	g	aagaatat	at	cgcccatgcc	t	tcgcgcttgg	cagccgaggt	agaccccaac	600	
gccaagct	a	tctacaac	ga	ctacaacgag	g	ctgttacccg	ccaagcgtga	tgcgattatt	660	
cggtgtgta	a	aaggcgtg	ca	gaaggctggc	g	gcaccattc	acggtgtggg	gatgcaagg	720	
cacatgag	cc	tgtcacat	cc	ggatttcg	cg	gagttcgaaa	aatccataat	cgaatacgcc	780	
aagttgggg	g	tgaaggtg	ca	cgttaccgaa	ct	ggatatcg	acgtgttgcc	actggcgtgg	840	
aacctgagt	g	cggaatttc	ca	aatcgcttt	ga	ataccgcc	cagagatgga	tccttatcgc	900	
gaaggtttg	c	ccgccc	aa	agtcgaggag	ct	agcggctc	gttacgaggc	gctgtttaaa	960	
atcctgctg	c	gtcatcg	cg	caaaattgag	cg	tgtgacca	cttggggcac	caacgactca	1020	
gagacctgg	t	taaatgg	ctt	ccccattccg	gg	gcgcgatga	attacccaat	gctgttcgat	1080	
cgtaataac	c	agcccaag	tt	ggcctatcac	cg	gctgctgg	cactcaaaca	aaagaaaagt	1140	
cagtaa									1146	

<210> 326

<211> 381

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<221> SIGNAL

<222> (1)...(27)

<400> 326

Met Thr Ile Ser Arg Arg Lys Phe Met Trp Gly Thr Ala Ala Leu Leu
 1 5 10 15
 Ala Thr Thr Gln Leu Lys Thr Arg Ala Leu Ala Ala Ala Met Ala Ser
 20 25 30
 Thr Gly Ile Lys Asp Ala Phe Lys Gly Asp Phe His Ile Gly Thr Ala
 35 40 45
 Ile Ser Asn Ala Thr Leu Gln Asn Gln Asp Ala Thr Met Leu Asp Leu
 50 55 60
 Ile Lys Arg Glu Phe Asn Ala Ile Thr Ala Glu Asn Cys Met Lys Trp
 65 70 75 80
 Glu Pro Ile Arg Pro Gln Leu Asp Gln Trp Asn Trp Glu Leu Ala Asp
 85 90 95
 Arg Phe Val Asp Phe Gly Val Lys Asn Lys Met Tyr Val Val Gly His
 100 105 110
 Thr Leu Ile Trp His Ser Gln Ala Pro Ala His Ile Tyr Leu Asp Ala
 115 120 125
 Asp Gly Lys Pro Asn Ser Arg Asp Ala Gln Leu Lys Val Met Glu Glu
 130 135 140
 His Ile Arg Thr Leu Ala Gly Arg Tyr Lys Gly Lys Ile Asp Ala Trp
 145 150 155 160
 Asp Val Val Asn Glu Ala Val Glu Asp Asp Gly Ser Trp Arg Gln Thr
 165 170 175
 Gly Trp Tyr Lys Asn Met Gly Glu Glu Tyr Ile Ala His Ala Phe Arg
 180 185 190
 Leu Ala Ala Glu Val Asp Pro Asn Ala Lys Leu Leu Tyr Asn Asp Tyr
 195 200 205
 Asn Glu Ala Val Pro Ala Lys Arg Asp Ala Ile Ile Arg Val Val Lys
 210 215 220
 Gly Val Gln Lys Ala Gly Ala Pro Ile His Gly Val Gly Met Gln Gly
 225 230 235 240
 His Met Ser Leu Ser His Pro Asp Phe Ala Glu Phe Glu Lys Ser Ile
 245 250 255
 Ile Glu Tyr Ala Lys Leu Gly Val Lys Val His Val Thr Glu Leu Asp
 260 265 270
 Ile Asp Val Leu Pro Leu Ala Trp Asn Leu Ser Ala Glu Ile Ser Asn
 275 280 285
 Arg Phe Glu Tyr Arg Pro Glu Met Asp Pro Tyr Arg Glu Gly Leu Pro
 290 295 300
 Ala Lys Val Glu Glu Glu Leu Ala Ala Arg Tyr Glu Ala Leu Phe Lys
 305 310 315 320
 Ile Leu Leu Arg His Arg Asp Lys Ile Glu Arg Val Thr Thr Trp Gly
 325 330 335
 Thr Asn Asp Ser Glu Thr Trp Leu Asn Gly Phe Pro Ile Pro Gly Arg
 340 345 350
 Met Asn Tyr Pro Met Leu Phe Asp Arg Asn Asn Gln Pro Lys Leu Ala
 355 360 365
 Tyr His Arg Leu Leu Ala Leu Lys Gln Lys Lys Ser Gln
 370 375 380

<210> 327

<211> 1500

<212> DNA

<213> Unknown

<220>

<223> obtained from an environmental sample.

<400> 327

atgaaacggt	cagtcctctat	ctttatcgca	tgtttagtaa	tgacagtatt	aacaattagc	60
gggtgtcgcg	caccagaagc	atctgcagca	ggggcgaaaa	cgctgttagc	ccttaatggc	120
cagcttagca	ttaaagggtac	tcagctagtc	aatcaaaacg	gaaaatcggt	gcagctgaag	180
gggatcagct	cacacgggtt	gcagtgggtc	ggcgattatg	tcaataaaga	ctctttaaaa	240
tggctaagag	acgattgggg	aattaccgtc	ttccgagcgg	caatgtacac	ggctgaaggc	300
ggttatatag	agaatccgtc	tgtgaaaaat	aaagtcaaag	aagctgttga	agcggcaaaa	360
gagctcggga	tatatgtcat	cattgactgg	catattttta	atgacggcaa	tccaaatcaa	420
aataaagaga	aggcgaagga	attctttaag	gaaatgtcga	gcctttacgg	aagcacacca	480
aacgttattt	atgaaattgc	taatgaaccg	aacgggtgatg	taaattggaa	gcgcgatatc	540

aaaccgtatg	cggaggaagt	gatttcggtt	atccgtaaaa	atgacccgga	taacatcatt	600
attaccggaa	ctggcacttg	gagtcaggat	gtcaatgatg	ctgctgatga	tcagcttaag	660
gatgcaaacg	tcatgtacgc	gcttcatttt	tatgcaggta	cacacggcca	gtattttaagg	720
gataaagccg	attatgcgct	cagcaaagga	gcgccgattt	ttgtaacgga	atggggggacg	780
agtgcgctt	ccggaaatgg	cggggtcttc	cttgaccagt	cgaggggaatg	gctgaattat	840
ctcgacaaca	agaaaatcag	ctgggtaaac	tggaaacctt	ctgataagca	ggaatcttcc	900
tcagctttta	agccgggggc	atctaaaaca	ggcggctggc	cgttatcaga	tttatccgct	960
tcaggggacat	ttgtaaggga	aaagatccgt	ggctcccaac	attcgactga	agacagatct	1020
gagacaccaa	agcaagataa	acccgtacag	gaaaacagcc	tatctgtgca	atacagaaca	1080
ggggatggaa	gtgtgaacag	caaccaaatc	cgtcctcaga	tccatgtgaa	aaacaacagc	1140
aagaccaccg	ttaattttaaa	aaatgtaact	gtccgctact	ggtataacac	gaaaaacaaa	1200
ggccaaaact	tcgactgtga	ctacgcgaag	atcggatgca	gcaatgtgac	gcacaagttt	1260
gtgacattac	aaaaacctgt	aaaagggtga	gatgcctatc	tggaaacttg	gtttaaaaac	1320
gggacactgt	caccgggagc	aaacactgga	gaaatccaaa	ttcgtcttca	caatgaggat	1380
tggggcaatt	attcacaaat	cggggattat	tctttttctc	agtcaaatac	gtttaaagat	1440
acaaaaaaaa	tcacattata	taataacgga	aaactaattt	ggggaactga	acccaaatag	1500

<210> 328

<211> 499

<212> PRT

<213> Unknown

<220>

<223> obtained from an environmental sample.

<221> SIGNAL

<222> (1)...(29)

<400> 328

Met	Lys	Arg	Ser	Val	Ser	Ile	Phe	Ile	Ala	Cys	Leu	Val	Met	Thr	Val
1				5					10					15	
Leu	Thr	Ile	Ser	Gly	Val	Ala	Ala	Pro	Glu	Ala	Ser	Ala	Ala	Gly	Ala
			20					25					30		
Lys	Thr	Pro	Val	Ala	Leu	Asn	Gly	Gln	Leu	Ser	Ile	Lys	Gly	Thr	Gln
		35					40					45			
Leu	Val	Asn	Gln	Asn	Gly	Lys	Ser	Val	Gln	Leu	Lys	Gly	Ile	Ser	Ser
	50					55					60				
His	Gly	Leu	Gln	Trp	Phe	Gly	Asp	Tyr	Val	Asn	Lys	Asp	Ser	Leu	Lys
65					70				75					80	
Trp	Leu	Arg	Asp	Asp	Trp	Gly	Ile	Thr	Val	Phe	Arg	Ala	Ala	Met	Tyr
			85						90					95	
Thr	Ala	Glu	Gly	Gly	Tyr	Ile	Glu	Asn	Pro	Ser	Val	Lys	Asn	Lys	Val
			100					105					110		
Lys	Glu	Ala	Val	Glu	Ala	Ala	Lys	Glu	Leu	Gly	Ile	Tyr	Val	Ile	Ile
	115						120					125			
Asp	Trp	His	Ile	Leu	Asn	Asp	Gly	Asn	Pro	Asn	Gln	Asn	Lys	Glu	Lys
	130					135					140				
Ala	Lys	Glu	Phe	Phe	Lys	Glu	Met	Ser	Ser	Leu	Tyr	Gly	Ser	Thr	Pro
145					150				155					160	
Asn	Val	Ile	Tyr	Glu	Ile	Ala	Asn	Glu	Pro	Asn	Gly	Asp	Val	Asn	Trp
			165					170						175	
Lys	Arg	Asp	Ile	Lys	Pro	Tyr	Ala	Glu	Glu	Val	Ile	Ser	Val	Ile	Arg
			180					185					190		
Lys	Asn	Asp	Pro	Asp	Asn	Ile	Ile	Ile	Thr	Gly	Thr	Gly	Thr	Trp	Ser
	195							200					205		
Gln	Asp	Val	Asn	Asp	Ala	Ala	Asp	Asp	Gln	Leu	Lys	Asp	Ala	Asn	Val
	210					215					220				
Met	Tyr	Ala	Leu	His	Phe	Tyr	Ala	Gly	Thr	His	Gly	Gln	Tyr	Leu	Arg
225					230					235				240	
Asp	Lys	Ala	Asp	Tyr	Ala	Leu	Ser	Lys	Gly	Ala	Pro	Ile	Phe	Val	Thr
			245						250					255	
Glu	Trp	Gly	Thr	Ser	Asp	Ala	Ser	Gly	Asn	Gly	Gly	Val	Phe	Leu	Asp
			260					265					270		
Gln	Ser	Arg	Glu	Trp	Leu	Asn	Tyr	Leu	Asp	Asn	Lys	Lys	Ile	Ser	Trp
	275						280					285			
Val	Asn	Trp	Asn	Leu	Ser	Asp	Lys	Gln	Glu	Ser	Ser	Ser	Ala	Leu	Lys
	290					295					300				
Pro	Gly	Ala	Ser	Lys	Thr	Gly	Gly	Trp	Pro	Leu	Ser	Asp	Leu	Ser	Ala
305					310					315					320

Ser Gly Thr Phe Val Arg Glu Lys Ile Arg Gly Ser Gln His Ser Thr
 325 330 335
 Glu Asp Arg Ser Glu Thr Pro Lys Gln Asp Lys Pro Val Gln Glu Asn
 340 345 350
 Ser Leu Ser Val Gln Tyr Arg Thr Gly Asp Gly Ser Val Asn Ser Asn
 355 360 365
 Gln Ile Arg Pro Gln Ile His Val Lys Asn Asn Ser Lys Thr Thr Val
 370 375 380
 Asn Leu Lys Asn Val Thr Val Arg Tyr Trp Tyr Asn Thr Lys Asn Lys
 385 390 395 400
 Gly Gln Asn Phe Asp Cys Asp Tyr Ala Lys Ile Gly Cys Ser Asn Val
 405 410 415
 Thr His Lys Phe Val Thr Leu Gln Lys Pro Val Lys Gly Ala Asp Ala
 420 425 430
 Tyr Leu Glu Leu Gly Phe Lys Asn Gly Thr Leu Ser Pro Gly Ala Asn
 435 440 445
 Thr Gly Glu Ile Gln Ile Arg Leu His Asn Glu Asp Trp Gly Asn Tyr
 450 455 460
 Ser Gln Ile Gly Asp Tyr Ser Phe Ser Gln Ser Asn Thr Phe Lys Asp
 465 470 475 480
 Thr Lys Lys Ile Thr Leu Tyr Asn Asn Gly Lys Leu Ile Trp Gly Thr
 485 490 495
 Glu Pro Lys

<210> 329
 <211> 2268
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<400> 329
 atgaggaacg ttcaggaaat aggaggcagt atgtacaaaa aggcttttct tgtactggca 60
 ttgtttttgc tggtggcgcc ggtggcgctc ccgtctgttg gggctgcgcc gcaggggccc 120
 cgctgcgcgc atgtggcggg cgacatttta gtgggttacg cctccagaaa cgatttctgg 180
 aacatgtctg actcagccca atacacagaa gttgcccgc caagttcaa cttcatgacg 240
 cccgaaaacg ccatgaagtg ggacgccatt catcccgcgc aaaactcata cagttttgcc 300
 caggccgacc ggcacgtgca gtttgcccag gccacaaca tggccgtgca tggacatgcc 360
 ctgctgtggc acagccaaaa tccaggctgg ctgaccaatg gcaactggct ccgcagccaa 420
 ttgatcaaca tcatgaacga ccacattgac acggtcgccg gccgttatgc aggtgaggtg 480
 ctggtgtggg acgtggtcaa tcaggcggtt aatgaggatg gaacttatcg cagcaccatc 540
 tgggtacaac ggatcggaca ggaatatatc gacctggcct ttaccgcgc ccgcgcgcc 600
 gatcctcat ccaactcat ttacaacgat tacaacattg gctgggttaa cagtaagtcg 660
 aatggcgctt acaacatggc cgccgatag gtgagggcg gtgtgcccac cgacggcggt 720
 gggtttccaga tgcacctgga acggggcgcc gtcagcgga gcagtctggc gagcaacatg 780
 cagcggttctg ccgatttggg attggaagtt tacatcaccg aattggacgt gcgcattccc 840
 caaaacccaa cccagcagga ttgacaggct caggcggaag tttaccaaac ggtgacgaat 900
 cgctgttttg cgcagcctgc ctgcaaggcg ttgcaggctt ggggcatccc cgacaaatat 960
 tcctgggtac cggacgtatt ccccggcacg ggccgccttc tgttgtttaa cgacaactat 1020
 gaggccaaac ccgcctatta tgccgtccag gcagagttga tggccgcgaa tccgcagccc 1080
 acaaacacac cgggaacgcc cgctcatacc ccttcggcca cgtctacgtc tgcggccact 1140
 gctacgcccc cggcaacggc cacggcgacc gccaccacc cctccggcgg cggcggttgc 1200
 gccgttgatt acgtcattgc caaccagtgg ggcaatggct ttcaggccaa cgtcaccatc 1260
 accaatcaca gcgcgcgcc ggtgaacggc tataccctgg cctggacca cgcgcgggg 1320
 cagattgtca ccagcggctg gaacgtaacc atcgcccaa gcggcagcgc cgtcagcgcc 1380
 agcaaccggc ccggttattg gaacggtgtg atcggagcca acggcgga gatttctttt 1440
 gggtttccaga gatctctggc gggcggcagc gcggtcgcc ccaattattt tgccttgaac 1500
 ggcgctgcct gtaacggggc cgtccttccg cctactgcca ccttcacgcc ttcaccgacg 1560
 gctaccatgt gtccccaggc aacgcctgaa ctgcttgctg tgcagccggg gacttcaccc 1620
 actaccaaac tgtctcaaac gctggtgggt cgtttaggca acggcgaatg ggtgcgcgct 1680
 gccggaccgc caggcggtgt caccgtcact gcgcccggac cggatggtta tttccgcctg 1740
 acgataccgc tggcagccaa taccagcaac gccattctgg tagaaggcg ggtgcgggtt 1800
 atcaccattt caaatggctg cacctatggc gggtatacct tgagcagaac cgtaacgatt 1860
 gtgcaagcca gcagcccagt caccttaacg ccgactgcca cactttcccc caccgccacg 1920
 gcaacgccta cggtaaccgc cacgtcgccg tcaggcgcc gcaccgtcgc ctacgccatc 1980
 accaacgact ggggcagcgg tttcaccgcc aacgttacc tcaccaatac tggcggaagc 2040
 gccctcaacg gctggaccct ggcctatgcc ttcccggca atcaaacat cagcaacgcc 2100

tggaacggaa	cggccgttca	gtccggcagc	agcgtcagcg	tcaccaacgc	cggttggaat	2160
ggcagcctgc	cgcccaacgt	ctccgccagc	tttggttcc	aggcgagcta	cagcggaat	2220
aacagcgtcc	ctgccagctt	tacgctgaac	ggcgcgcttt	gccattga		2268

<210> 330
 <211> 755
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<221> SIGNAL
 <222> (1)...(35)

<400> 330
 Met Arg Asn Val Gln Glu Ile Gly Gly Ser Met Tyr Lys Lys Ala Phe
 1 5 10 15
 Leu Val Leu Ala Leu Phe Leu Leu Leu Ala Ala Val Ala Leu Pro Ser
 20 25 30
 Val Gly Ala Ala Pro Gln Gly Pro Arg Leu Arg Asp Val Ala Gly Asp
 35 40 45
 Ile Leu Val Gly Tyr Ala Ser Arg Asn Asp Phe Trp Asn Met Ser Asp
 50 55 60
 Ser Ala Gln Tyr Thr Glu Val Ala Arg Thr Glu Phe Asn Phe Met Thr
 65 70 75 80
 Pro Glu Asn Ala Met Lys Trp Asp Ala Ile His Pro Ala Gln Asn Ser
 85 90 95
 Tyr Ser Phe Ala Gln Ala Asp Arg His Val Gln Phe Ala Gln Ala Asn
 100 105 110
 Asn Met Ala Val His Gly His Ala Leu Val Trp His Ser Gln Asn Pro
 115 120 125
 Gly Trp Leu Thr Asn Gly Asn Trp Ser Arg Ser Gln Leu Ile Asn Ile
 130 135 140
 Met Asn Asp His Ile Asp Thr Val Ala Gly Arg Tyr Ala Gly Glu Val
 145 150 155 160
 Leu Val Trp Asp Val Val Asn Gln Ala Phe Asn Glu Asp Gly Thr Tyr
 165 170 175
 Arg Ser Thr Ile Trp Tyr Asn Gly Ile Gly Gln Glu Tyr Ile Asp Leu
 180 185 190
 Ala Phe Thr Arg Ala Arg Ala Ala Asp Pro His Ala Lys Leu Ile Tyr
 195 200 205
 Asn Asp Tyr Asn Ile Gly Trp Leu Asn Ser Lys Ser Asn Gly Val Tyr
 210 215 220
 Asn Met Ala Ala Asp Met Val Arg Arg Gly Val Pro Ile Asp Gly Val
 225 230 235 240
 Gly Phe Gln Met His Leu Glu Arg Gly Gly Val Ser Gly Ser Ser Leu
 245 250 255
 Ala Ser Asn Met Gln Arg Phe Ala Asp Leu Gly Leu Glu Val Tyr Ile
 260 265 270
 Thr Glu Leu Asp Val Arg Ile Pro Gln Asn Pro Thr Gln Gln Asp Leu
 275 280 285
 Gln Ala Gln Ala Ala Val Tyr Gln Thr Val Thr Asn Arg Cys Leu Ala
 290 295 300
 Gln Pro Ala Cys Lys Ala Leu Gln Val Trp Gly Ile Pro Asp Lys Tyr
 305 310 315 320
 Ser Trp Val Pro Asp Val Phe Pro Gly Thr Gly Ala Pro Leu Leu Phe
 325 330 335
 Asn Asp Asn Tyr Glu Ala Lys Pro Ala Tyr Tyr Ala Val Gln Ala Glu
 340 345 350
 Leu Met Ala Ala Asn Pro Gln Pro Thr Asn Thr Pro Gly Thr Pro Ala
 355 360 365
 His Thr Pro Ser Ala Thr Ser Thr Ser Ala Ala Thr Ala Thr Pro Pro
 370 375 380
 Ala Thr Ala Thr Ala Thr Ala Thr Thr Pro Ser Gly Gly Gly Val Cys
 385 390 395 400
 Ala Val Asp Tyr Val Ile Ala Asn Gln Trp Gly Asn Gly Phe Gln Ala
 405 410 415
 Asn Val Thr Ile Thr Asn His Ser Ala Ala Pro Val Asn Gly Tyr Thr
 Page 250

420 425 430
 Leu Ala Trp Thr His Ala Pro Gly Gln Ile Val Thr Ser Gly Trp Asn
 435 440 445
 Val Thr Ile Ala Gln Ser Gly Ser Ala Val Ser Ala Ser Asn Pro Ala
 450 455 460
 Gly Tyr Trp Asn Gly Val Ile Gly Ala Asn Gly Gly Lys Ile Ser Phe
 465 470 475 480
 Gly Phe Gln Gly Ser Leu Ala Gly Gly Ser Ala Val Ala Pro Thr Tyr
 485 490 495
 Phe Ala Leu Asn Gly Ala Ala Cys Asn Gly Ala Val Leu Pro Pro Thr
 500 505 510
 Ala Thr Phe Thr Pro Ser Pro Thr Ala Thr Met Cys Pro Gln Ala Thr
 515 520 525
 Pro Glu Leu Leu Val Val Gln Pro Val Thr Ser Pro Thr Thr Gln Leu
 530 535 540
 Ser Gln Thr Leu Val Val Arg Leu Gly Asn Gly Glu Trp Val Arg Ala
 545 550 555 560
 Ala Gly Pro Ala Gly Val Val Thr Val Thr Ala Pro Asp Pro Asp Gly
 565 570 575
 Tyr Phe Arg Leu Thr Ile Pro Leu Ala Ala Asn Thr Ser Asn Ala Ile
 580 585 590
 Leu Val Glu Gly Arg Val Arg Val Ile Thr His Ser Asn Gly Cys Thr
 595 600 605
 Tyr Gly Gly Tyr Thr Leu Ser Arg Thr Val Thr Ile Val Gln Ala Ser
 610 615 620
 Ser Pro Val Thr Leu Thr Pro Thr Ala Thr Pro Ser Pro Thr Ala Thr
 625 630 635 640
 Ala Thr Pro Thr Val Thr Ala Thr Ser Pro Ser Gly Ala Cys Thr Val
 645 650 655
 Ala Tyr Ala Ile Thr Asn Asp Trp Gly Ser Gly Phe Thr Ala Asn Val
 660 665 670
 Thr Leu Thr Asn Thr Gly Gly Ser Ala Leu Asn Gly Trp Thr Leu Ala
 675 680 685
 Tyr Ala Phe Pro Gly Asn Gln Thr Ile Ser Asn Ala Trp Asn Gly Thr
 690 695 700
 Ala Val Gln Ser Gly Ser Ser Val Ser Val Thr Asn Ala Gly Trp Asn
 705 710 715 720
 Gly Ser Leu Pro Pro Asn Val Ser Ala Ser Phe Gly Phe Gln Ala Ser
 725 730 735
 Tyr Ser Gly Asn Asn Ser Val Pro Ala Ser Phe Thr Leu Asn Gly Ala
 740 745 750
 Leu Cys His
 755

<210> 331

<211> 1242

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 331

gtgttcaagg	gcttgcgcta	tttgctgttg	ctgtgcctga	gtgcgggact	ggctctttgcc	60
tgtgcgccac	ggctctgtgac	cgccccaccc	gatgggctaa	gcggggcaa	taggctcctg	120
cgccaaggaa	ccctcactgt	ccttgtccag	aatgcccaag	ggcaacccat	tgccaacgcc	180
aaggtggtag	ctgctcagca	aacccatgcc	ttcccccttg	gtgttgccct	agatacagca	240
atgtttgagc	cttccccgcc	acccgcagcc	aactgggtacc	gcaacaccgc	tcgccaataat	300
tttaatgcgc	ctgtccatga	aaacgccttc	aagtgggtatg	cccttgaacc	ggagcagggc	360
aagctggact	ttacgatggc	ggatcgcatc	ctcgcttgga	gtgaagccca	aggctggccg	420
atgcgggggc	acaccctctt	ttgggaagtt	gagcaattta	accccccatg	gctgaaaacg	480
ctgccaccag	agcaactgcg	ggctgcccgtc	aagaaccatg	ccatgacggt	gtgtcgccat	540
taccgcgggc	gaatcaatga	atattgatgtc	aataatgaaa	tgctccacgg	taactttttc	600
cgcagtcggt	tgggaacggc	catagttaaa	gagatgttcg	agtgggtgcc	cgagggtaac	660
cccagggcgc	tccttttatgt	gaacgactac	ggcattattg	agggcgatcg	cctcgacgac	720
tacgtgcagc	agattcgcg	tttactgggg	caaggggttc	ccattgggtg	cattggcatt	780
caagcccatt	tggaatatcc	cttggatgca	gccaagatga	aacgcgcctt	tgataccctt	840
gcccaattca	acctgcccct	aaaaatcact	gaagttagtg	tcagccttgc	cgacgagcag	900
cagcaggcgc	agacactgcg	ccaaatctac	cgcatttggt	ttgcccatcc	agccgtcaaa	960

gagatcctcc	tgtggggatt	ttgggaaggc	aaccactggc	gaccccaagc	aggactgtac	1020
cgtcgcgact	tttccgcca	acctgctgcc	gaagcctatc	gacaactcct	ctttcaggag	1080
tgggtggacca	ccagcaacgg	caaaactaat	gccgatgggc	gctggcagac	ccgcggctat	1140
gcggggcgct	atcgccctcac	agtaacggcc	aacggccaga	ccattaaccg	cgacattgac	1200
ctaccagact	tgagagaaac	cgtgaccgta	caattcccat	ga		1242

<210> 332

<211> 413

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<221> SIGNAL

<222> (1)...(28)

<400> 332

Met	Phe	Lys	Gly	Leu	Arg	Tyr	Leu	Leu	Leu	Leu	Cys	Leu	Ser	Ala	Gly
1				5				10						15	
Leu	Val	Phe	Ala	Cys	Ala	Pro	Arg	Ser	Val	Thr	Ala	Pro	Pro	Asp	Gly
			20					25					30		
Leu	Ser	Gly	Gln	Ile	Arg	Leu	Leu	Arg	Gln	Gly	Thr	Leu	Thr	Val	Leu
		35				40						45			
Val	Gln	Asn	Ala	Gln	Gly	Gln	Pro	Ile	Ala	Asn	Ala	Lys	Val	Val	Ala
	50					55				60					
Ala	Gln	Gln	Thr	His	Ala	Phe	Pro	Phe	Gly	Val	Ala	Leu	Asp	Thr	Ala
65					70				75						80
Met	Phe	Glu	Pro	Ser	Pro	Pro	Pro	Ala	Ala	Asn	Trp	Tyr	Arg	Asn	Thr
				85				90						95	
Ala	Arg	Gln	Asn	Phe	Asn	Ala	Ala	Val	His	Glu	Asn	Ala	Leu	Lys	Trp
			100					105						110	
Tyr	Ala	Leu	Glu	Pro	Glu	Gln	Gly	Lys	Leu	Asp	Phe	Thr	Met	Ala	Asp
		115					120					125			
Arg	Ile	Leu	Ala	Trp	Ser	Glu	Ala	Gln	Gly	Trp	Pro	Met	Arg	Gly	His
	130					135					140				
Thr	Leu	Phe	Trp	Glu	Val	Glu	Gln	Phe	Asn	Pro	Pro	Trp	Leu	Lys	Thr
145					150				155						160
Leu	Pro	Pro	Glu	Gln	Leu	Arg	Ala	Ala	Val	Lys	Asn	His	Ala	Met	Thr
			165						170					175	
Val	Cys	Arg	His	Tyr	Arg	Gly	Arg	Ile	Asn	Glu	Phe	Asp	Val	Asn	Asn
			180					185					190		
Glu	Met	Leu	His	Gly	Asn	Phe	Phe	Arg	Ser	Arg	Leu	Gly	Asn	Gly	Ile
		195				200						205			
Val	Lys	Glu	Met	Phe	Glu	Trp	Cys	Arg	Glu	Gly	Asn	Pro	Glu	Ala	Val
	210					215					220				
Leu	Tyr	Val	Asn	Asp	Tyr	Gly	Ile	Ile	Glu	Gly	Asp	Arg	Leu	Asp	Asp
225					230					235					240
Tyr	Val	Gln	Gln	Ile	Arg	Asp	Leu	Leu	Gly	Gln	Gly	Val	Pro	Ile	Gly
			245						250					255	
Gly	Ile	Gly	Ile	Gln	Ala	His	Leu	Glu	Tyr	Pro	Leu	Asp	Ala	Ala	Lys
			260					265					270		
Met	Lys	Arg	Ala	Leu	Asp	Thr	Leu	Ala	Gln	Phe	Asn	Leu	Pro	Leu	Lys
		275					280					285			
Ile	Thr	Glu	Val	Ser	Val	Ser	Leu	Ala	Asp	Glu	Gln	Gln	Gln	Ala	Glu
	290					295					300				
Thr	Leu	Arg	Gln	Ile	Tyr	Arg	Ile	Gly	Phe	Ala	His	Pro	Ala	Val	Lys
305					310					315					320
Glu	Ile	Leu	Leu	Trp	Gly	Phe	Trp	Glu	Gly	Asn	His	Trp	Arg	Pro	Gln
			325						330					335	
Ala	Gly	Leu	Tyr	Arg	Arg	Asp	Phe	Ser	Ala	Lys	Pro	Ala	Ala	Glu	Ala
			340					345					350		
Tyr	Arg	Gln	Leu	Leu	Phe	Gln	Glu	Trp	Trp	Thr	Thr	Ser	Asn	Gly	Lys
		355					360					365			
Thr	Asn	Ala	Asp	Gly	Arg	Trp	Gln	Thr	Arg	Gly	Tyr	Ala	Gly	Arg	Tyr
	370					375					380				
Arg	Leu	Thr	Val	Thr	Ala	Asn	Gly	Gln	Thr	Ile	Asn	Arg	Asp	Ile	Asp
385					390					395					400
Leu	Pro	Asp	Leu	Glu	Arg	Thr	Val	Thr	Val	Gln	Phe	Pro			

405

410

<210> 333
 <211> 1152
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<400> 333
 atgaaaagac aattttattgg acgattgaga cttgtcacta tcctttcaat catagtgatt 60
 atgggatgtg cttcaaacaa aagtgatcag aatgttgata acctaaagga cgccttcgac 120
 ggtttgttcc ttattggaac tgccatgaat acccccaga tcaccggaca ggatacccgg 180
 acgcttgaat tgatcaaaaa acacatgaac tccattgtgg cagaaaacgt tatgaaaagc 240
 ggactaatac agcccagcga aggggagttc gacttctcac ttgccgacca gtttgtgcaa 300
 ttcggtgttg acaacaacat gcacatcgta gggcataccc ttatctggca ttcgcaggct 360
 ccaggggtgg tttttgtgga tgaaaacggg aatgatgtta gtcccgaagt tcttaagcaa 420
 aggatgaaat accacatcta cacagtagtt ggccgttaca aaggcaaagt gcacggttgg 480
 gatgtgggtga atgaatgtat cgttgacgat gggtcatggc gcaacagcaa gttttaccag 540
 atcctgggtg aagactttgt aaagtatgcc ttccagtttg cttcagaagc cgacccgaat 600
 gctgaattgt attacaacga ttattccatg gcacttcccg gccgccgcca gggagtcgta 660
 aacatggtaa aaaatctaca ggcacaaggt attaaaattg acggaatagg aatgcagggc 720
 cacctgatga tcgaccatcc atcccttgaa gatttcgaaa ccagtttgct tgcctttgcc 780
 gatctgggtg tacatgttat gatcactgag cttgatgtat ctgtacttcc ttttcctacc 840
 cgcaacctcg gtgctgatgt atctctaaac atagcttaca acactgaact gaacccctat 900
 cccgatggat tgcctgatga tgtggcccaa aaacttcatg atcgtggct cgatatatat 960
 cgtttattta taaaacatca cgacaagatc acccggtgta ctacctgggg tacagccgat 1020
 ggatgtcat ggaagaacaa ctggccatt cgtagacgca cagactttcc tttattattc 1080
 gaccgcgatt ttcaacccaa accggtagta gctgatatta tcaaagaagc attggctgca 1140
 aagagaaaat ag 1152

<210> 334
 <211> 383
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<221> SIGNAL
 <222> (1)...(30)

<400> 334
 Met Lys Arg Gln Phe Ile Gly Arg Leu Arg Leu Val Thr Ile Leu Ser
 1 5 10 15
 Ile Ile Val Ile Met Gly Cys Ala Ser Asn Lys Ser Asp Gln Asn Val
 20 25 30
 Asp Asn Leu Lys Asp Ala Phe Asp Gly Leu Phe Leu Ile Gly Thr Ala
 35 40 45
 Met Asn Thr Pro Gln Ile Thr Gly Gln Asp Thr Arg Thr Leu Glu Leu
 50 55 60
 Ile Lys Lys His Met Asn Ser Ile Val Ala Glu Asn Val Met Lys Ser
 65 70 75 80
 Gly Leu Ile Gln Pro Ser Glu Gly Glu Phe Asp Phe Ser Leu Ala Asp
 85 90 95
 Gln Phe Val Gln Phe Gly Val Asp Asn Asn Met His Ile Val Gly His
 100 105 110
 Thr Leu Ile Trp His Ser Gln Ala Pro Gly Trp Phe Phe Val Asp Glu
 115 120 125
 Asn Gly Asn Asp Val Ser Pro Glu Val Leu Lys Gln Arg Met Lys Asp
 130 135 140
 His Ile Tyr Thr Val Val Gly Arg Tyr Lys Gly Lys Val His Gly Trp
 145 150 155 160
 Asp Val Val Asn Glu Cys Ile Val Asp Asp Gly Ser Trp Arg Asn Ser
 165 170 175
 Lys Phe Tyr Gln Ile Leu Gly Glu Asp Phe Val Lys Tyr Ala Phe Gln
 180 185 190
 Phe Ala Ser Glu Ala Asp Pro Asn Ala Glu Leu Tyr Tyr Asn Asp Tyr

```

      195              200              205
Ser Met Ala Leu Pro Gly Arg Arg Gln Gly Val Val Asn Met Val Lys
      210              215              220
Asn Leu Gln Ala Gln Gly Ile Lys Ile Asp Gly Ile Gly Met Gln Gly
      225              230              235
His Leu Met Ile Asp His Pro Ser Leu Glu Asp Phe Glu Thr Ser Leu
      245              250              255
Leu Ala Phe Ala Asp Leu Gly Val His Val Met Ile Thr Glu Leu Asp
      260              265              270
Val Ser Val Leu Pro Phe Pro Thr Arg Asn Leu Gly Ala Asp Val Ser
      275              280              285
Leu Asn Ile Ala Tyr Asn Thr Glu Leu Asn Pro Tyr Pro Asp Gly Leu
      290              295              300
Pro Asp Asp Val Ala Gln Lys Leu His Asp Arg Trp Leu Asp Ile Tyr
      305              310              315
Arg Leu Phe Ile Lys His His Asp Lys Ile Thr Arg Val Thr Thr Trp
      325              330              335
Gly Thr Ala Asp Gly Met Ser Trp Lys Asn Asn Trp Pro Ile Arg Gly
      340              345              350
Arg Thr Asp Phe Pro Leu Leu Phe Asp Arg Asp Phe Gln Pro Lys Pro
      355              360              365
Val Val Ala Asp Ile Ile Lys Glu Ala Leu Ala Ala Lys Arg Lys
      370              375              380

```

<210> 335

<211> 849

<212> DNA

<213> Unknown

<220>

<223> obtained from an environmental sample.

<400> 335

```

atgattccaa ggatcgtcct ggccgtccgc atatccccta cttttctcag cccacaaaaa 60
ggggtaataa aaatgataaa gcgggctttt atgataaccc tggcggcctt cctcctcctt 120
ttcgccttaa attccctgcc tatccatgcc ggggccgaag gcggggagga aaagtttacc 180
cccaagggtca tcgtggagca cggtttcgag aataacgact tccacggttg ggtcccccg 240
ggcgggggtcg ggaccatttc cattaccaat gaggcggccc atagcgggtc ctctgcctg 300
aagatcaccg gccggactca agcttggcat atgccgcggg tggagatcac caagtactta 360
gaaaagggag ctaagtataa gatcgaattg tacgtcaagc tccccgcggg cacctcgccg 420
cgcaagttcc agctggcggg tctcaccgt tatctcgaag gcaaccagac cagggacaaa 480
gaggactcca tctcggacga ggtggagggt accgccgata cctggaccaa ggtcgagggc 540
gagtacgtct tcgacccggc ggccatcggc gcctacgtct acccctacct caagggcgac 600
cccgcagggg cctatgcccc ctatctcatc gatgatttca agatcaccac gatcgcccc 660
gcccccaaga agaccgccgc taccgccgcg gcaaaagagg cagaagagcc cttaatcgag 720
accgatatac catccttaaa agacgtctgc cgcctctact tcgagatcgg cgcggccatc 780
gagccatatg agttattctc caagccccac gatcagctgc tccggaaaca tttcaacacc 840
gttggttga

```

<210> 336

<211> 282

<212> PRT

<213> Unknown

<220>

<223> obtained from an environmental sample.

<221> SIGNAL

<222> (1)...(50)

<400> 336

```

Met Ile Pro Arg Ile Val Leu Ala Val Arg Ile Ser Pro Thr Phe Leu
 1          5          10          15
Ser Pro Gln Lys Gly Val Ile Lys Met Ile Lys Arg Ala Phe Met Ile
      20          25          30
Thr Leu Ala Ala Phe Leu Leu Leu Phe Ala Leu Asn Ser Leu Pro Ile
      35          40          45
His Ala Gly Ala Glu Gly Gly Glu Glu Lys Phe Thr Pro Lys Val Ile
      50          55          60

```

Val Glu His Gly Phe Glu Asn Asn Asp Phe His Gly Trp Val Pro Arg
 65 70 75 80
 Gly Gly Val Gly Thr Ile Ser Ile Thr Asn Glu Ala Ala His Ser Gly
 85 90 95
 Ser Ser Cys Leu Lys Ile Thr Gly Arg Thr Gln Ala Trp His Met Pro
 100 105 110
 Arg Val Glu Ile Thr Lys Tyr Leu Glu Lys Gly Ala Lys Tyr Lys Ile
 115 120 125
 Glu Leu Tyr Val Lys Leu Pro Ala Gly Thr Ser Pro Arg Lys Phe Gln
 130 135 140
 Leu Ala Val Leu Thr Arg Tyr Leu Glu Gly Asn Gln Thr Arg Asp Lys
 145 150 155 160
 Glu Asp Ser Ile Ser Asp Glu Val Glu Val Thr Ala Asp Thr Trp Thr
 165 170 175
 Lys Val Glu Gly Glu Tyr Val Phe Asp Pro Ala Ala Ile Gly Ala Tyr
 180 185 190
 Val Tyr Pro Tyr Leu Lys Gly Asp Pro Ala Gly Ala Tyr Ala Pro Tyr
 195 200 205
 Leu Ile Asp Asp Phe Lys Ile Thr Thr Ile Ala Pro Ala Pro Lys Lys
 210 215 220
 Thr Ala Ala Thr Ala Ala Ala Lys Glu Ala Glu Glu Pro Leu Ile Glu
 225 230 235 240
 Thr Asp Ile Pro Ser Leu Lys Asp Val Cys Ala Ser Tyr Phe Glu Ile
 245 250 255
 Gly Ala Ala Ile Glu Pro Tyr Glu Leu Phe Ser Lys Pro His Asp Gln
 260 265 270
 Leu Leu Arg Lys His Phe Asn Thr Val Gly
 275 280

<210> 337
 <211> 870
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<400> 337
 atgaagcccg acagcgtgct ggatgtaaac gccagcaaaa agctctccgc ccaggatgaa 60
 accgccgtgg cggtgaaatt cgacgccgcc cgcgccctgc tggattttgt caaggaaaac 120
 gggctcaagg tgcacgggtca cgtgctggta tggcattccc agacgccgga agccttcttc 180
 cacgagggtc atgatgccgc caggccctac gtggggcggg acgtgatgct ggggcgcatg 240
 aaaaactaca tcaaggccgt gtttgaatac actgagacca attaccccg cgtcatcgtc 300
 tcctgggacg tagtgaacga agccatcgac gacggcacca acaagctgcg ccagtccaac 360
 tggttcaaaa ccgttggcga ggatttcgtg ctccgcgcct ttgaatacgc caggaaatac 420
 gccccgaag gcacgctgct ttattacaac gattacaaca cgcctatgcc cggcaagctg 480
 aacggcatcg ccaatctgct caaagccctc atcgccgagg gcaacatcga cggctacggc 540
 ttccaaatgc accacagcgt gggcttcccc tccatggaaa tgatttccgc gtctgtggag 600
 cgcacgcgcg gcatgggcct taagctccgg gtcagcgaat tggacgtggg caccgacgga 660
 aacaccgaaa gcagcttcac caagcaggcg gaaaaatagc ccgccatcat gcggctgctg 720
 ctggattata aggatcaaat ggaagccgtg caggtatggg gcctcaccga cgatatgagc 780
 tggcgccggg ccaactatcc cctgctcttc gacggcaaat tcaaccccaa gcccgccttc 840
 tacgccgtgg ctgaccata cgcaaaataa 870

<210> 338
 <211> 289
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<400> 338
 Met Lys Pro Asp Ser Val Leu Asp Val Asn Ala Ser Lys Lys Leu Ser
 1 5 10 15
 Ala Gln Asp Glu Thr Ala Val Ala Val Lys Phe Asp Ala Ala Arg Ala
 20 25 30
 Leu Leu Asp Phe Val Lys Glu Asn Gly Leu Lys Val His Gly His Val
 35 40 45

Leu Val Trp His Ser Gln Thr Pro Glu Ala Phe Phe His Glu Gly Tyr
 50 55 60
 Asp Ala Ala Arg Pro Tyr Val Gly Arg Asp Val Met Leu Gly Arg Met
 65 70 75 80
 Lys Asn Tyr Ile Lys Ala Val Phe Glu Tyr Thr Glu Thr Asn Tyr Pro
 85 90 95
 Gly Val Ile Val Ser Trp Asp Val Val Asn Glu Ala Ile Asp Asp Gly
 100 105 110
 Thr Asn Lys Leu Arg Gln Ser Asn Trp Phe Lys Thr Val Gly Glu Asp
 115 120 125
 Phe Val Leu Arg Ala Phe Glu Tyr Ala Arg Lys Tyr Ala Pro Glu Gly
 130 135 140
 Thr Leu Leu Tyr Tyr Asn Asp Tyr Asn Thr Ala Met Pro Gly Lys Leu
 145 150 155 160
 Asn Gly Ile Ala Asn Leu Leu Lys Ala Leu Ile Ala Glu Gly Asn Ile
 165 170 175
 Asp Gly Tyr Gly Phe Gln Met His His Ser Val Gly Phe Pro Ser Met
 180 185 190
 Glu Met Ile Ser Ala Ser Val Glu Arg Ile Ala Gly Met Gly Leu Lys
 195 200 205
 Leu Arg Val Ser Glu Leu Asp Val Gly Thr Asp Gly Asn Thr Glu Ser
 210 215 220
 Ser Phe Thr Lys Gln Ala Glu Lys Tyr Ala Ala Ile Met Arg Leu Leu
 225 230 235 240
 Leu Asp Tyr Lys Asp Gln Met Glu Ala Val Gln Val Trp Gly Leu Thr
 245 250 255
 Asp Asp Met Ser Trp Arg Arg Ala Asn Tyr Pro Leu Leu Phe Asp Gly
 260 265 270
 Lys Phe Asn Pro Lys Pro Ala Phe Tyr Ala Val Ala Asp Pro Tyr Ala
 275 280 285
 Lys

<210> 339
 <211> 1125
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<400> 339
 atgcctatgg agcgacccac tttcttgctg tttcttgctt tttttcttct ttttaccatg 60
 attttcgccc ccggagggtg ccgacccctt gccccttcac ggatggagat cgagacggat 120
 atccccctccc tcaaggaagt cgccgcttct tatttcgaga tcggcgcggc cgtcgaagccg 180
 tatcagttat cctctccacc ccacgatgcc cttctgcgga aacattttta ctgcctcgtg 240
 gcggagaacg tcatgaagcc cgcctccatc cagccatcgg aggggtattt caactggacc 300
 gaagcggaca agatcgtgaa ctacgccaaa gcccacggga tgaagctccg cttccatacc 360
 ctcgtctggc ataatacagg cccggatttg ttcttcgctg gtaacgacaa aaccgcctt 420
 ttgcagcgt tggagaatca tatccggact atcattaaaa gatatggcga taagggtcgac 480
 tattgggacg tgggtaacga agtaatatag gacaacggcg gtatgcgaaa cagcaagtgg 540
 taccagatca ccgggaagga ctacatcaag accgccttcc ggggtggcaga cgacgagctc 600
 aggaagaatg ggtggaggaa agaaggtcgt cagctctata tcaacgacta caacacccat 660
 aacccaacga agagagaggg gatctggcgc ttgatccaag agctccgggc ggaagggatt 720
 cccgtcgacg gagtaggcca ccagacgcat atcaatatcg aatggccgcc cgtaagccag 780
 atcgtggaat cgatccgctt cttcggcgaa aaaggcctcg ataaccagg gaccgagctg 840
 gatgtgagca tctatacgaa tgacaaggat tcacatggta gttatcaggc catcccgcag 900
 gaagtcttca tcaagcagg taatcgctac aaggaaactt ttgaagggct aaaaagtgt 960
 aaaaactacc tcagcaacgt caccttcttg ggcattggcg acgatcatac ctggctgaac 1020
 cgttggccca tcgaacggcc cgatgctcct cttcctttcg atatctatct caaggccaag 1080
 ccggcgtatt gggggatcgt ggatgctttg aagctttcgc ggtga 1125

<210> 340
 <211> 374
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<221> SIGNAL

<222> (1)...(23)

<400> 340

```

Met Pro Met Glu Arg Pro Thr Phe Leu Arg Phe Leu Ala Phe Phe Leu
 1      5      10      15
Leu Phe Thr Met Ile Phe Ala Ala Gly Gly Cys Arg Pro Leu Ala Pro
 20      25      30
Ser Arg Met Glu Ile Glu Thr Asp Ile Pro Ser Leu Lys Glu Val Ala
 35      40      45
Ala Ser Tyr Phe Glu Ile Gly Ala Ala Val Glu Pro Tyr Gln Leu Ser
 50      55      60
Ser Pro Pro His Asp Ala Leu Leu Arg Lys His Phe Asn Cys Leu Val
 65      70      75      80
Ala Glu Asn Val Met Lys Pro Ala Ser Ile Gln Pro Ser Glu Gly Tyr
 85      90      95
Phe Asn Trp Thr Glu Ala Asp Lys Ile Val Asn Tyr Ala Lys Ala His
100      105      110
Gly Met Lys Leu Arg Phe His Thr Leu Val Trp His Asn Gln Val Pro
115      120      125
Asp Trp Phe Phe Ala Gly Asn Asp Lys Thr Arg Leu Leu Gln Arg Leu
130      135      140
Glu Asn His Ile Arg Thr Ile Ile Lys Arg Tyr Gly Asp Lys Val Asp
145      150      155      160
Tyr Trp Asp Val Val Asn Glu Val Ile Asp Asp Asn Gly Gly Met Arg
165      170      175
Asn Ser Lys Trp Tyr Gln Ile Thr Gly Lys Asp Tyr Ile Lys Thr Ala
180      185      190
Phe Arg Val Ala Asp Asp Glu Leu Arg Lys Asn Gly Trp Arg Lys Glu
195      200      205
Gly Arg Gln Leu Tyr Ile Asn Asp Tyr Asn Thr His Asn Pro Thr Lys
210      215      220
Arg Glu Gly Ile Trp Arg Leu Ile Gln Glu Leu Arg Ala Glu Gly Ile
225      230      235      240
Pro Val Asp Gly Val Gly His Gln Thr His Ile Asn Ile Glu Trp Pro
245      250      255
Pro Val Ser Gln Ile Val Glu Ser Ile Arg Phe Phe Gly Glu Lys Gly
260      265      270
Leu Asp Asn Gln Val Thr Glu Leu Asp Val Ser Ile Tyr Thr Asn Asp
275      280      285
Lys Asp Ser His Gly Ser Tyr Gln Ala Ile Pro Gln Glu Val Phe Ile
290      295      300
Lys Gln Gly Asn Arg Tyr Lys Glu Leu Phe Glu Gly Leu Lys Ser Val
305      310      315      320
Lys Asn Tyr Leu Ser Asn Val Thr Phe Trp Gly Met Ala Asp Asp His
325      330      335
Thr Trp Leu Asn Arg Trp Pro Ile Glu Arg Pro Asp Ala Pro Leu Pro
340      345      350
Phe Asp Ile Tyr Leu Lys Ala Lys Pro Ala Tyr Trp Gly Ile Val Asp
355      360      365
Ala Leu Lys Leu Ser Arg
370

```

<210> 341

<211> 1347

<212> DNA

<213> Unknown

<220>

<223> obtained from an environmental sample.

<400> 341

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atgacaatta acaacaaaac tacagcgagt cctagtattc ccagcaccca caattccctc      60
ccgtcgcttc gcacactgtt taccaccagc ctgctcacgc tggccctgac cgcctgcggt      120
ggttctttcca gcagcgacaa ggacccttca agctccagct ccagtgaatc atcaagttcc      180
agcgaatcct cgagctcagc ttccagcgaa tcctcgagca gtgagtccag cagtagctct      240
tccgcggggcc atttctccat cgagccggac ttccagctct acagcctggc caacttcccg      300
gtgggcgtgg cggctctccgc cgccaacgag aacgacagca tcttcaacag tccggatgcc      360

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gccgaacgtc	aggccgttat	tattgagcac	ttctctcagc	tcaccgccgg	caacatcatg	420
aaaatgagct	acctgcagcc	gagtcaaggc	aacttcacct	tcgatgacgc	cgacgagttg	480
gttaacttcg	cccaagccaa	tggcatgacc	gtacacggcc	actccaccat	ctggcacgcg	540
gactaccaag	taccgaactt	catgagaaac	tttgaagggtg	accaggagga	atgggcagaa	600
attctgaccg	atcacgtcac	taccatcatc	gagcacttcc	ccgacgatgt	ggtcacacgc	660
tgggacgtgg	tgaacgaggc	tgtcgatcaa	ggcacggcga	acggctggcg	ccattcgggtg	720
ttctacaatg	cattcgacgc	cccgggaagaa	ggcgacattc	ccgaatacat	caaagtcgct	780
ttccgcgcgcg	cgcgcgaggc	tgacgccaac	gtagaccctct	actacaacga	ctacgacaat	840
accgccaatg	cccagcgcct	ggccaaaaca	ctgcaaattg	ccgagggtact	ggacgccgaa	900
ggcaccattg	acggcgctcg	tttccagatg	cacgcctaca	tggattacc	gagcctgacc	960
cattttgaaa	acgccttccg	gcaagtcgtc	gacctggggc	tcaaagtga	agttaccgag	1020
ctggacgtat	ccgtagtcaa	cccctacggc	ggcgaagcac	ctccacaacc	ggaatacgac	1080
aaagaactgg	ccggcgcgca	aaaactgcgc	ttctgccaaa	tcgccgaagt	ttacatgaac	1140
actgtaccgc	aggagttacg	cggtggcttc	accgtctggg	gcctgaccga	tgatgaaagt	1200
tggctgatgc	aacagttcag	aaacgccacc	ggcgccgact	acgacgacgt	ctggccgtta	1260
ctgttcaatg	ccgacaaatc	cgccaaaccg	gcactgcaag	gcgtggccga	cgcctttacc	1320
ggacaaacct	gcacctccga	gttctaa				1347

<210> 342

<211> 448

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<221> SIGNAL

<222> (1)...(45)

<400> 342

Met	Thr	Ile	Asn	Asn	Lys	Thr	Thr	Ala	Ser	Pro	Ser	Ile	Pro	Ser	Thr
1				5					10					15	
His	Asn	Ser	Leu	Pro	Ser	Leu	Arg	Thr	Leu	Phe	Thr	Thr	Ser	Leu	Leu
			20					25					30		
Thr	Leu	Ala	Leu	Thr	Ala	Cys	Gly	Gly	Ser	Ser	Ser	Ser	Asp	Lys	Asp
		35					40					45			
Pro	Ser	Ser	Ser	Ser	Ser	Ser	Glu	Ser	Ser	Ser	Ser	Ser	Glu	Ser	Ser
	50					55					60				
Ser	Ser	Ala	Ser	Ser	Glu	Ser	Ser	Ser	Ser	Glu	Ser	Ser	Ser	Ser	Ser
65					70					75					80
Ser	Ala	Gly	His	Phe	Ser	Ile	Glu	Pro	Asp	Phe	Gln	Leu	Tyr	Ser	Leu
			85						90					95	
Ala	Asn	Phe	Pro	Val	Gly	Val	Ala	Val	Ser	Ala	Ala	Asn	Glu	Asn	Asp
			100					105					110		
Ser	Ile	Phe	Asn	Ser	Pro	Asp	Ala	Glu	Arg	Gln	Ala	Val	Ile	Ile	
		115					120					125			
Glu	His	Phe	Ser	Gln	Leu	Thr	Ala	Gly	Asn	Ile	Met	Lys	Met	Ser	Tyr
	130					135					140				
Leu	Gln	Pro	Ser	Gln	Gly	Asn	Phe	Thr	Phe	Asp	Ala	Asp	Glu	Leu	
145					150					155				160	
Val	Asn	Phe	Ala	Gln	Ala	Asn	Gly	Met	Thr	Val	His	Gly	His	Ser	Thr
			165						170					175	
Ile	Trp	His	Ala	Asp	Tyr	Gln	Val	Pro	Asn	Phe	Met	Arg	Asn	Phe	Glu
		180						185					190		
Gly	Asp	Gln	Glu	Glu	Trp	Ala	Glu	Ile	Leu	Thr	Asp	His	Val	Thr	Thr
	195						200					205			
Ile	Ile	Glu	His	Phe	Pro	Asp	Asp	Val	Val	Ile	Ser	Trp	Asp	Val	Val
	210					215					220				
Asn	Glu	Ala	Val	Asp	Gln	Gly	Thr	Ala	Asn	Gly	Trp	Arg	His	Ser	Val
225					230					235					240
Phe	Tyr	Asn	Ala	Phe	Asp	Ala	Pro	Glu	Glu	Gly	Asp	Ile	Pro	Glu	Tyr
			245						250					255	
Ile	Lys	Val	Ala	Phe	Arg	Ala	Ala	Arg	Glu	Ala	Asp	Ala	Asn	Val	Asp
		260						265					270		
Leu	Tyr	Tyr	Asn	Asp	Tyr	Asp	Asn	Thr	Ala	Asn	Ala	Gln	Arg	Leu	Ala
	275						280					285			
Lys	Thr	Leu	Gln	Ile	Ala	Glu	Val	Leu	Asp	Ala	Glu	Gly	Thr	Ile	Asp
	290					295					300				
Gly	Val	Gly	Phe	Gln	Met	His	Ala	Tyr	Met	Asp	Tyr	Pro	Ser	Leu	Thr

305	His	Phe	Glu	Asn	Ala	310	Phe	Arg	Gln	Val	Val	315	Asp	Leu	Gly	Leu	Lys	320	Val
					325							330					335		
Lys	Val	Thr	Glu	Leu	Asp	Val	Ser	Val	Val	Asn	Pro	Tyr	Gly	Gly	Glu				
			340					345						350					
Ala	Pro	Pro	Gln	Pro	Glu	Tyr	Asp	Lys	Glu	Leu	Ala	Gly	Ala	Gln	Lys				
		355					360						365						
Leu	Arg	Phe	Cys	Gln	Ile	Ala	Glu	Val	Tyr	Met	Asn	Thr	Val	Pro	Glu				
	370					375					380								
Glu	Leu	Arg	Gly	Gly	Phe	Thr	Val	Trp	Gly	Leu	Thr	Asp	Asp	Glu	Ser				
385					390					395					400				
Trp	Leu	Met	Gln	Gln	Phe	Arg	Asn	Ala	Thr	Gly	Ala	Asp	Tyr	Asp	Asp				
			405						410					415					
Val	Trp	Pro	Leu	Phe	Asn	Ala	Asp	Lys	Ser	Ala	Lys	Pro	Ala	Leu					
			420				425					430							
Gln	Gly	Val	Ala	Asp	Ala	Phe	Thr	Gly	Gln	Thr	Cys	Thr	Ser	Glu	Phe				
		435					440					445							

<210> 343

<211> 2217

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 343

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ctgattgggc	ttattgcagc	gatattgggc	tgcgcggcgc	tgcttatgca	caatgagatc	240
tcattccctgg	gaattcagct	gagatcatgg	ctcagaggga	gcgacaatgt	gaacgctagc	300
tgggaaaagg	attggaagac	ggctgctaac	gagcaaatcg	agcagctccg	caagcgcaat	360
gtggagatcg	aggctcgtcg	tctgaacgga	aaccgcgtgc	ctggggctac	cgcttcgcgcg	420
gttcagcgca	cgcattcagtt	tggcttcggc	accgccatca	accgaacggc	gttgagcaat	480
ccggtgtacg	ccgattttgt	caaaaaccgt	tctgaatggg	tgaccttcga	gaacgaaggcc	540
aagtggctct	ggaatgaggg	cgtacaaggg	cgggtctatt	atcggggaggc	cgatcagctg	600
ctcgaatttg	ccaggcaaaa	cgggctgaag	gtgcgcggac	ataatctgtt	ctgggaggcg	660
gagaaatatc	agcccgagtg	ggtgaagagt	ctgacgggcg	ctgcgctgaa	ggaagcgatc	720
gataaccggc	tgaacagcgc	cgctcctgcat	tttaaggggc	atcttctgca	ctgggacgctc	780
aacaacgaaa	tgtttcacgg	cagcttcttc	aaggatcgcc	tggggggaaga	aatctggacc	840
tatatgtata	agcgaaccgg	ggaactcgat	cccggcgctca	agctgttcgt	caacgattac	900
aattttatcg	agtacccgcc	ggagcgggat	tataaccagg	tcattcaagc	gctcatcgat	960
cgggggatgc	cgattgacgg	catcggcgcg	caagggcatt	ttaacggagt	catcgatccc	1020
ttgttcgtta	aggggaagact	ggataagctg	gctgagctga	atctgccgat	ctggattacc	1080
gaattcgtatt	ccacgcataa	ggacgagaga	gtccgtgccg	ataatctgga	gaagatgtat	1140
cggctggcgt	tcgcccattcc	ggcggctcgaa	gggattgtca	tgtggggctt	ctgggcgggc	1200
tcccatttga	agggcactga	cggcgcgatc	gtgaatcaag	actggacgct	caatgccgcc	1260
ggacagcgat	accagcagct	tatggatgaa	tggaacgacg	tcgtcgaagg	cacgaccgat	1320
cagcgcggca	tgttttcggt	ccgggggttc	cacggaaact	acgatatgct	ggtcgattac	1380
cctggagcgg	cggctgtgaa	gcagtccttt	accttgagc	cggctctgg	caatgcgaag	1440
ctgcacattc	cgttcgacgt	tcaggacaag	tccatcccgg	aggctcctgc	caagctcagc	1500
gccgctgccg	cggattccca	ggttatgctg	agctggagca	aggtaaacgg	ggcaaccggc	1560
tatacggtta	aaagcgcggt	cagcgcggac	ggtccctata	cgccgattgc	ccatcagctg	1620
ctcaccgaga	ccttcacgca	catcgggtcta	gtgaaccgga	aagattatta	ttacgtgggtg	1680
agcgcagca	accatctagg	tgagagcccg	gattccgccc	cgatccgggc	cactccgcgt	1740
gccgcgggcg	agttacaaac	gaatctcgtg	cttcagtacc	gctccgctga	tggaataaac	1800
aactatcaaa	tgaagcctca	gttcacgac	aagaacgcag	gcaaagtgcc	catcccgtta	1860
agcgaactga	cgatccgcta	ctatttcacg	cggagagaca	cgcagccggg	ggataaccagg	1920
atcgactggg	cccaattcgg	agcagagcat	gtccagacga	cggctcgttc	gccatccgat	1980
gccgcggcgc	acgcctatgt	cgagctcagc	ttcctggagt	cggcaggggc	catcccttcc	2040
gatacgacat	taggcaatat	tcagctgcgc	atctttaaca	gcgatggctc	ttcgttcgat	2100
aaaacgaacg	attatttcctt	cgacccgacg	aaaaaggctt	atacggcgtg	ggagaaggtc	2160
acgctttatc	ggaacggggga	actgggttgg	gggatagagc	cttggggcgc	gaagtaa	2217

<210> 344

<211> 738

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 344

Met Val Glu His Glu Ala Glu Leu His Asp Tyr Arg Glu Arg Ile Cys
 1 5 10 15
 Glu Val Ala Trp Gln Phe Ala Gly Pro Gly Gly Arg Glu Gly Lys Ala
 20 25 30
 Asp Phe Ala Gly Asn Gln Gln Leu Val Leu Lys Met Lys Leu Ser
 35 40 45
 Arg Gly Arg Gly His Gly Val Leu Lys Arg Ala Gly Leu Ile Gly Leu
 50 55 60
 Ile Ala Ala Ile Leu Gly Cys Ala Ala Leu Leu Met His Asn Glu Ile
 65 70 75 80
 Ser Ser Leu Gly Ile Gln Leu Arg Ser Trp Leu Arg Gly Ser Asp Asn
 85 90 95
 Val Asn Ala Ser Trp Glu Lys Asp Trp Lys Thr Ala Ala Asn Glu Gln
 100 105 110
 Ile Glu Gln Leu Arg Lys Arg Asn Val Glu Ile Glu Val Val Asp Leu
 115 120 125
 Asn Gly Asn Pro Leu Pro Gly Ala Thr Val Arg Ala Val Gln Arg Thr
 130 135 140
 His Gln Phe Gly Phe Gly Thr Ala Ile Asn Arg Thr Ala Leu Ser Asn
 145 150 155 160
 Pro Val Tyr Ala Asp Phe Val Lys Asn Arg Phe Glu Trp Val Thr Phe
 165 170 175
 Glu Asn Glu Ala Lys Trp Leu Trp Asn Glu Ala Val Gln Gly Arg Val
 180 185 190
 Tyr Tyr Arg Glu Ala Asp Gln Leu Leu Glu Phe Ala Arg Gln Asn Gly
 195 200 205
 Leu Lys Val Arg Gly His Asn Leu Phe Trp Glu Ala Glu Lys Tyr Gln
 210 215 220
 Pro Gln Trp Val Lys Ser Leu Thr Gly Ala Ala Leu Lys Glu Ala Ile
 225 230 235 240
 Asp Asn Arg Leu Asn Ser Ala Val Leu His Phe Lys Gly Asn Phe Leu
 245 250 255
 His Trp Asp Val Asn Asn Glu Met Phe His Gly Ser Phe Phe Lys Asp
 260 265 270
 Arg Leu Gly Glu Glu Ile Trp Thr Tyr Met Tyr Lys Arg Thr Arg Glu
 275 280 285
 Leu Asp Pro Gly Val Lys Leu Phe Val Asn Asp Tyr Asn Phe Ile Glu
 290 295 300
 Tyr Pro Pro Glu Arg Asp Tyr Asn Gln Val Ile Gln Ala Leu Ile Asp
 305 310 315 320
 Arg Gly Met Pro Ile Asp Gly Ile Gly Ala Gln Gly His Phe Asn Gly
 325 330 335
 Val Ile Asp Pro Leu Phe Val Lys Gly Arg Leu Asp Lys Leu Ala Glu
 340 345 350
 Leu Asn Leu Pro Ile Trp Ile Thr Glu Phe Asp Ser Thr His Lys Asp
 355 360 365
 Glu Arg Val Arg Ala Asp Asn Leu Glu Lys Met Tyr Arg Leu Ala Phe
 370 375 380
 Ala His Pro Ala Val Glu Gly Ile Val Met Trp Gly Phe Trp Ala Gly
 385 390 395 400
 Ser His Trp Lys Gly Thr Asp Gly Ala Ile Val Asn Gln Asp Trp Thr
 405 410 415
 Leu Asn Ala Ala Gly Gln Arg Tyr Gln Leu Met Asp Glu Trp Thr
 420 425 430
 Thr Val Val Glu Gly Thr Thr Asp Gln Arg Gly Met Phe Ser Phe Arg
 435 440 445
 Gly Phe His Gly Thr Tyr Asp Met Leu Val Asp Tyr Pro Gly Ala Ala
 450 455 460
 Ala Val Lys Gln Ser Phe Thr Leu Glu Pro Gly Ser Gly Asn Ala Lys
 465 470 475 480
 Leu His Ile Pro Phe Asp Val Gln Asp Lys Ser Ile Pro Glu Ala Pro
 485 490 495
 Ala Lys Leu Ser Ala Ala Ala Ala Asp Ser Gln Val Met Leu Ser Trp
 500 505 510

Ser Lys Val Asn Gly Ala Thr Gly Tyr Thr Val Lys Ser Ala Val Ser
 515 520 525
 Ala Asp Gly Pro Tyr Thr Pro Ile Ala His Gln Leu Leu Thr Glu Thr
 530 535 540
 Phe Thr His Ile Gly Leu Val Asn Arg Lys Asp Tyr Tyr Val Val
 545 550 555 560
 Ser Ala Ser Asn His Leu Gly Glu Ser Pro Asp Ser Ala Pro Ile Arg
 565 570 575
 Ala Thr Pro Arg Ala Ala Gly Glu Leu Gln Thr Asn Leu Val Leu Gln
 580 585 590
 Tyr Arg Ser Ala Asp Gly Asp Asn Asn Tyr Gln Met Lys Pro Gln Phe
 595 600 605
 Thr Ile Lys Asn Ala Gly Lys Val Pro Ile Pro Leu Ser Glu Leu Thr
 610 615 620
 Ile Arg Tyr Tyr Phe Thr Pro Glu Ser Thr Gln Pro Val Asp Thr Arg
 625 630 635 640
 Ile Asp Trp Ala Gln Phe Gly Ala Glu His Val Gln Thr Thr Val Val
 645 650 655
 Pro Pro Ser Asp Ala Ala Ala His Ala Tyr Val Glu Leu Ser Phe Leu
 660 665 670
 Glu Ser Ala Gly Ala Ile Pro Ser Asp Thr Thr Leu Gly Asn Ile Gln
 675 680 685
 Leu Arg Ile Phe Asn Ser Asp Gly Ser Ser Phe Asp Lys Thr Asn Asp
 690 695 700
 Tyr Ser Phe Asp Pro Thr Lys Lys Ala Tyr Thr Ala Trp Glu Lys Val
 705 710 715 720
 Thr Leu Tyr Arg Asn Gly Glu Leu Val Trp Gly Ile Glu Pro Trp Gly
 725 730 735
 Ala Lys

<210> 345
 <211> 849
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<400> 345
 atgaagatga cctacatgca tccggctgaa gatacttact cgtttggtca agcggatcag 60
 ttggtcaact gggcgaaagc gaatggtatt ggcgtgcacg gccacactct ggtttggcac 120
 tccgaatacc aggtacccaa ttggatgaaa aattactctg gtgatgcaac tgcattccaa 180
 accatgctca acacccatgt gaaaactgtg gctgagcatt ttgctggcga actggacagc 240
 tgggacgttg tgaatgaagt gctggagccg ggctccaatg gttgctggcg tgaaaactct 300
 ctgtttctacc agaagcttgg caaagacttt gtcgcgaacg cattccgtgc agctcgcgag 360
 ggcgatccca atgcagactt gtattacaac gattactcga ctgaaaatgg tgtaacttcc 420
 gatgagaagt tcagttgttt gttggaacta gtcgatgagc ttctggaagc ggacgtgccg 480
 attacaggtg ttggtttcca aatgcacgtg caggcgcagt ggcctagcaa tgccaacatc 540
 ggcaaggcat tcaaagccat cgcgatcgc ggtctgaaag ttaaaatttc tgagctcgat 600
 gttcctgtta acaaccctta cggaaccact aatttccgcg aatacagcag ttttaccgcg 660
 gaagccgccc agctgcagaa gcagcgctac aagggcatta tgcaagcgta ccttgataac 720
 gtaccggcca acctgcgtgg tggtttcacc gtgtggggcg tttgggatgg cgatagctgg 780
 atcatgacgt tcagccagta caccaacgct aacgccaacg actggccact gttgttcacc 840
 gggccgtag 849

<210> 346
 <211> 282
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<400> 346
 Met Lys Met Thr Tyr Met His Pro Ala Glu Asp Thr Tyr Ser Phe Gly
 1 5 10 15
 Gln Ala Asp Gln Leu Val Asn Trp Ala Lys Ala Asn Gly Ile Gly Val
 20 25 30

His Gly His Thr Leu Val Trp His Ser Glu Tyr Gln Val Pro Asn Trp
 35 40 45
 Met Lys Asn Tyr Ser Gly Asp Ala Thr Ala Phe Gln Thr Met Leu Asn
 50 55 60
 Thr His Val Lys Thr Val Ala Glu His Phe Ala Gly Glu Leu Asp Ser
 65 70 75 80
 Trp Asp Val Val Asn Glu Val Leu Glu Pro Gly Ser Asn Gly Cys Trp
 85 90 95
 Arg Glu Asn Ser Leu Phe Tyr Gln Lys Leu Gly Lys Asp Phe Val Ala
 100 105 110
 Asn Ala Phe Arg Ala Ala Arg Glu Gly Asp Pro Asn Ala Asp Leu Tyr
 115 120 125
 Tyr Asn Asp Tyr Ser Thr Glu Asn Gly Val Thr Ser Asp Glu Lys Phe
 130 135 140
 Ser Cys Leu Leu Glu Leu Val Asp Glu Leu Leu Glu Ala Asp Val Pro
 145 150 155 160
 Ile Thr Gly Val Gly Phe Gln Met His Val Gln Ala Thr Trp Pro Ser
 165 170 175
 Asn Ala Asn Ile Gly Lys Ala Phe Lys Ala Ile Ala Asp Arg Gly Leu
 180 185 190
 Lys Val Lys Ile Ser Glu Leu Asp Val Pro Val Asn Asn Pro Tyr Gly
 195 200 205
 Thr Thr Asn Phe Pro Gln Tyr Ser Ser Phe Thr Ala Glu Ala Ala Glu
 210 215 220
 Leu Gln Lys Gln Arg Tyr Lys Gly Ile Met Gln Ala Tyr Leu Asp Asn
 225 230 235 240
 Val Pro Ala Asn Leu Arg Gly Gly Phe Thr Val Trp Gly Val Trp Asp
 245 250 255
 Gly Asp Ser Trp Ile Met Thr Phe Ser Gln Tyr Thr Asn Ala Asn Ala
 260 265 270
 Asn Asp Trp Pro Leu Leu Phe Thr Gly Pro
 275 280

<210> 347
 <211> 1794
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<400> 347
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 gggccggttt ccctgcttgg cggagatgcg ggcgcggcgt tccgctatac cgggccatcg 120
 gcgggcgcg cgagcggctc ggccgaatgg gtggcggtgg agaactatgcc gttcacgcac 180
 gcctggcgcg tgcgcacgaa tccgctgccg gagagcgcg gcaacgaatg ggacctgcgc 240
 atccgcgccc gcggagcggc ggctgtttcg gcaggggaca agatcctggc cgagttctgg 300
 atgcgctgcg tggagcccga aaacggcgac tgcattctgc gcctgaacgt ggagcgcgac 360
 gggctcgccgt ggaccaaata catcagcaac ccctaccggc tgggcccggga gtggcgggcg 420
 ttccgcgtgc tgttcgagat gcgggagagc tacgcccggc gcggctacat gatcgatttc 480
 tggatggggc agcaggtgca gacggcgga gtggcgggga tttccctgct gaattacggt 540
 ccgcaggcca cggccgagca gcttggcctg gaccggtttt atgagggcg gcggcgggac 600
 gccgcgtggc ggcaggcggc cgagcagcgg atcgaggaga tccggaaagc gggcatgatc 660
 atcgtggcg tgacgcccga cggcgagccg atcgagggcg ctgaaatccg ggcgaagctg 720
 aagcggcacg cgttcggtg gggcacggct gtggcgcat cacggcttct ggggacggga 780
 acggacagcg agcgctaccg caacttcata cgcgagaact tcaacatggc ggtgctcgag 840
 aacgacctga aatggggccc gttcgaagag aaccgcaacc gcgcgatgaa cgcgctgcgc 900
 tggctgcatg agaacgggat cacgtggatc cgcgggcaca atctcgtctg gccgggctgg 960
 cggtggatgc cgaacgacgt gcgcaacctg gcgaacaatc ccgaggcgct gcggcagcgg 1020
 attctggacc gcatccggga caccggcacg gccacggcgc ggctgggtgg gcatggggac 1080
 gtcgtcaacg agccggtggc cgagcgcgac gtgctgaaca ttctgggcga cgaggtgatg 1140
 gcggactggt tccgcgccgc gaaggagtgc gatcccagg cgaggatggt catcaatgag 1200
 tacgacattc tggcgggcaa cggggccaat ctgcggaagc agaacgcgta ttaccgcatg 1260
 atcagatgac tgttgaagct cgaggcgcg gtggaggga gtggagggca accggtacgc ccggctcggg 1320
 gacacggcca cggcgccgga gcggatgctg gagatcatga accggtacgc ccggctcggg 1380
 ctgccgatcg ccatcaccga gtacgatttc gccacggcgg acgaggagct gcaggcgag 1440
 ttcacgcgcg acctgatgat tctcgcttcc agccatccgg cggtttcgga cttcctgatg 1500
 tggggcttct ggggaaggag ccactggaag ccgctggcg ccatgatccg gcgcgactgg 1560
 agcgagaagc cgatgtaccg cgtctggcgc gagctgatct tcgagcgctg gcagacggat 1620

gaaacaggcg	tgacgccgga	gcacgggtgcc	atctacgtgc	ggggcttcaa	gggcgactac	1680
gagatcacgg	tgaaggcggg	cgggcaggaa	gtccgggtgc	cgtacacgct	gaaagaagac	1740
ggccaggtgc	tgtgggtgac	ggtgggcggg	gcttctgaag	agcgcgtgca	gtaa	1794

<210> 348
 <211> 597
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<221> SIGNAL
 <222> (1)...(20)

<400> 348
 Met Pro Val Leu Phe Ala Leu Phe Leu Val Ala Ser Ser Cys Ala Ala
 1 5 10 15
 Gln Ser Leu Ala Gly Pro Val Ser Leu Leu Gly Gly Asp Ala Gly Ala
 20 25 30
 Ala Phe Arg Tyr Thr Gly Pro Ser Ala Gly Ala Ala Ser Gly Ser Ala
 35 40 45
 Glu Trp Val Ala Val Glu Asn Met Pro Phe Thr His Ala Trp Arg Leu
 50 55 60
 Arg Thr Asn Pro Leu Pro Glu Ser Gly Gly Asn Glu Trp Asp Leu Arg
 65 70 75 80
 Ile Arg Ala Arg Gly Ala Ala Ala Val Ser Ala Gly Asp Lys Ile Leu
 85 90 95
 Ala Glu Phe Trp Met Arg Cys Val Glu Pro Glu Asn Gly Asp Cys Ile
 100 105 110
 Leu Arg Leu Asn Val Glu Arg Asp Gly Ser Pro Trp Thr Lys Ser Ile
 115 120 125
 Ser Asn Pro Tyr Pro Val Gly Arg Glu Trp Arg Arg Phe Arg Val Leu
 130 135 140
 Phe Glu Met Arg Glu Ser Tyr Ala Ala Gly Gly Tyr Met Ile Asp Phe
 145 150 155 160
 Trp Met Gly Gln Gln Val Gln Thr Ala Glu Val Gly Gly Ile Ser Leu
 165 170 175
 Leu Asn Tyr Gly Pro Gln Ala Thr Ala Glu Gln Leu Gly Leu Asp Arg
 180 185 190
 Phe Tyr Glu Gly Ala Ala Ala Asp Ala Ala Trp Arg Gln Ala Ala Glu
 195 200 205
 Gln Arg Ile Glu Glu Ile Arg Lys Ala Gly Met Ile Ile Val Ala Val
 210 215 220
 Thr Pro Asp Gly Glu Pro Ile Glu Gly Ala Glu Ile Arg Ala Lys Leu
 225 230 235 240
 Lys Arg His Ala Phe Gly Trp Gly Thr Ala Val Ala Ala Ser Arg Leu
 245 250 255
 Leu Gly Thr Gly Thr Asp Ser Glu Arg Tyr Arg Asn Phe Ile Arg Glu
 260 265 270
 Asn Phe Asn Met Ala Val Leu Glu Asn Asp Leu Lys Trp Gly Pro Phe
 275 280 285
 Glu Glu Asn Arg Asn Arg Ala Met Asn Ala Leu Arg Trp Leu His Glu
 290 295 300
 Asn Gly Ile Thr Trp Ile Arg Gly His Asn Leu Val Trp Pro Gly Trp
 305 310 315 320
 Arg Trp Met Pro Asn Asp Val Arg Asn Leu Ala Asn Asn Pro Glu Ala
 325 330 335
 Leu Arg Gln Arg Ile Leu Asp Arg Ile Arg Asp Thr Ala Thr Ala Thr
 340 345 350
 Arg Gly Leu Val Val His Trp Asp Val Val Asn Glu Pro Val Ala Glu
 355 360 365
 Arg Asp Val Leu Asn Ile Leu Gly Asp Glu Val Met Ala Asp Trp Phe
 370 375 380
 Arg Ala Ala Lys Glu Cys Asp Pro Glu Ala Arg Met Phe Ile Asn Glu
 385 390 395 400
 Tyr Asp Ile Leu Ala Ala Asn Gly Ala Asn Leu Arg Lys Gln Asn Ala
 405 410 415
 Tyr Tyr Arg Met Ile Glu Met Leu Leu Lys Leu Glu Ala Pro Val Glu

420 425 430
 Gly Ile Gly Phe Gln Gly His Phe Asp Thr Ala Thr Pro Pro Glu Arg
 435 440 445
 Met Leu Glu Ile Met Asn Arg Tyr Ala Arg Leu Gly Leu Pro Ile Ala
 450 455 460
 Ile Thr Glu Tyr Asp Phe Ala Thr Ala Asp Glu Glu Leu Gln Ala Gln
 465 470 475 480
 Phe Thr Arg Asp Leu Met Ile Leu Ala Phe Ser His Pro Ala Val Ser
 485 490 495
 Asp Phe Leu Met Trp Gly Phe Trp Glu Gly Ser His Trp Lys Pro Leu
 500 505 510
 Gly Ala Met Ile Arg Arg Asp Trp Ser Glu Lys Pro Met Tyr Arg Val
 515 520 525
 Trp Arg Glu Leu Ile Phe Glu Arg Trp Gln Thr Asp Glu Thr Gly Val
 530 535 540
 Thr Pro Glu His Gly Ala Ile Tyr Val Arg Gly Phe Lys Gly Asp Tyr
 545 550 555 560
 Glu Ile Thr Val Lys Ala Gly Gly Gln Glu Val Arg Val Pro Tyr Thr
 565 570 575
 Leu Lys Glu Asp Gly Gln Val Leu Trp Val Thr Val Gly Gly Ala Ser
 580 585 590
 Glu Glu Arg Val Gln
 595

<210> 349

<211> 1794

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 349

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gcgggcccgg	cgagcggctc	ggccgaatgg	gtggcggtgg	agaacatgcc	gttcacgcac	180
gcctggcggc	tgcgcacgaa	tccgctgccg	gagagcggcg	gcaacgaatg	ggacctgcgc	240
atccgcgccc	gcggagcggc	ggctgtttcg	gcaggggaca	agatcctggc	cgagttctgg	300
atgcgctgcg	tggagcccga	aaacggcgac	tgcattctgc	gcctgaacgt	ggagcgcgcac	360
gggtcgccgt	ggaccaaadc	catcagcaac	ccctaccg	tgggcccggga	gtggcgccgg	420
ttccgctg	tgttcgagat	gcgggagagc	tacgccgccg	gcggctacat	gacgatttc	480
tggatggg	agcaggtgca	gacggcgga	gtgggcccga	ttccctgct	gaattacggt	540
ccgcaggcca	cgcccgagca	gcttggcctg	gaccggttct	atgaaggcgc	ggcgccggac	600
gccgcgtggc	ggcaggcggc	cgagcagcgg	atcgaggaga	tccggaaagc	gggcatgatc	660
atcgtggcgg	tgacgcggga	cggcgagccg	atcgaaggcg	ccgagatccg	ggcgaagctg	720
aagcggcagc	cgttcgggtg	gggcacggcg	gtggcgccat	cacggcttct	ggggacggga	780
acggacagcg	agcgtaccg	caacttcac	cgcgagaact	tcaacatggc	ggtgctcgag	840
aacgacctga	aatggggccc	gttcgaggag	aaccgcgccc	gcgcaatgaa	cgcgctgcgc	900
tggctgcatg	agaacgggat	cacgtggatc	cgcgggcaca	atctcgtctg	gccaggctgg	960
cggtggatgc	cgagcgacgt	gcgcaacctg	gcgaacaatc	ccgaagccct	gcggcagcgg	1020
attctggacc	gcatccggga	cacggccacc	gccacgcgcg	ggctggctgt	gcactggggac	1080
gtcgtcaacg	agccggtggc	cgagcgcgac	gtgctgaaca	ttctgggcga	cgagggtgatg	1140
gcggactggt	tccgcgcccgc	gaaggagtgc	gatcccagg	cgaggatggt	catcaacgaa	1200
tacgacattc	tggcggcgaa	cggggccaac	ctgcggaagc	agaacgcgta	ctaccgcatg	1260
atcgagatgc	tgttgaagct	cgaggcgccg	gtagagggca	tcggcttcca	gggccatttc	1320
gacacggcta	cgccgcccga	gcggatgctg	gagatcatga	accggtacgc	ccggctcggg	1380
ctgccgatcg	ccatcaccga	gtacgatttc	gccacggtag	acgaagagct	gcaggcgag	1440
ttcacgcgcg	acctgatgat	tctcgctttc	agccatccgg	cggtttcggga	cttcttgatg	1500
tggggcttct	gggaaggag	ccactggaag	cgctggg	ccatgatccg	gcgcgactgg	1560
agcgagaagc	cgatgtaccg	cgtctggcgc	gagctgatct	tcgagcgtg	gcagacggat	1620
gaaacgggag	tgacgccgga	gcacggggcc	atctacgtgc	ggggcttcaa	gggcgactac	1680
gaaatcacgg	tgaaggctgg	cgggcaggaa	gtccgggtgc	cgtaacacgt	gaaagaagac	1740
ggccagggtgc	tgtgggtgac	ggtgggcggt	acttctgaag	agcaggcgcc	gtaa	1794

<210> 350

<211> 597

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<221> SIGNAL

<222> (1)...(20)

<400> 350

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Gln	Ser	Leu	Ala	Gly	Pro	Val	Ser	Leu	Leu	Gly	Gly	Asp	Ala	Gly	Ala
			20					25					30		
Ala	Phe	Arg	Tyr	Thr	Gly	Pro	Ser	Ala	Gly	Ala	Ala	Ser	Gly	Ser	Ala
		35					40					45			
Glu	Trp	Val	Ala	Val	Glu	Asn	Met	Pro	Phe	Thr	His	Ala	Trp	Arg	Leu
	50					55					60				
Arg	Thr	Asn	Pro	Leu	Pro	Glu	Ser	Gly	Gly	Asn	Glu	Trp	Asp	Leu	Arg
65					70					75				80	
Ile	Arg	Ala	Arg	Gly	Ala	Ala	Ala	Val	Ser	Ala	Gly	Asp	Lys	Ile	Leu
				85					90					95	
Ala	Glu	Phe	Trp	Met	Arg	Cys	Val	Glu	Pro	Glu	Asn	Gly	Asp	Cys	Ile
			100					105					110		
Leu	Arg	Leu	Asn	Val	Glu	Arg	Asp	Gly	Ser	Pro	Trp	Thr	Lys	Ser	Ile
		115					120					125			
Ser	Asn	Pro	Tyr	Pro	Val	Gly	Arg	Glu	Trp	Arg	Arg	Phe	Arg	Val	Leu
	130					135					140				
Phe	Glu	Met	Arg	Glu	Ser	Tyr	Ala	Ala	Gly	Gly	Tyr	Met	Ile	Asp	Phe
145					150					155				160	
Trp	Met	Gly	Gln	Gln	Val	Gln	Thr	Ala	Glu	Val	Gly	Gly	Ile	Ser	Leu
				165					170					175	
Leu	Asn	Tyr	Gly	Pro	Gln	Ala	Thr	Ala	Glu	Gln	Leu	Gly	Leu	Asp	Arg
			180					185					190		
Phe	Tyr	Glu	Gly	Ala	Ala	Ala	Asp	Ala	Ala	Trp	Arg	Gln	Ala	Ala	Glu
		195					200								
Gln	Arg	Ile	Glu	Glu	Ile	Arg	Lys	Ala	Gly	Met	Ile	Ile	Val	Ala	Val
	210					215					220				
Thr	Pro	Asp	Gly	Glu	Pro	Ile	Glu	Gly	Ala	Glu	Ile	Arg	Ala	Lys	Leu
225					230					235					240
Lys	Arg	His	Ala	Phe	Gly	Trp	Gly	Thr	Ala	Val	Ala	Ala	Ser	Arg	Leu
			245						250					255	
Leu	Gly	Thr	Gly	Thr	Asp	Ser	Glu	Arg	Tyr	Arg	Asn	Phe	Ile	Arg	Glu
			260					265					270		
Asn	Phe	Asn	Met	Ala	Val	Leu	Glu	Asn	Asp	Leu	Lys	Trp	Gly	Pro	Phe
		275					280						285		
Glu	Glu	Asn	Arg	Ala	Arg	Ala	Met	Asn	Ala	Leu	Arg	Trp	Leu	His	Glu
	290					295					300				
Asn	Gly	Ile	Thr	Trp	Ile	Arg	Gly	His	Asn	Leu	Val	Trp	Pro	Gly	Trp
305					310					315					320
Arg	Trp	Met	Pro	Ser	Asp	Val	Arg	Asn	Leu	Ala	Asn	Asn	Pro	Glu	Ala
			325						330					335	
Leu	Arg	Gln	Arg	Ile	Leu	Asp	Arg	Ile	Arg	Asp	Thr	Ala	Thr	Ala	Thr
			340					345							
Arg	Gly	Leu	Val	Val	His	Trp	Asp	Val	Val	Asn	Glu	Pro	Val	Ala	Glu
		355					360					365			
Arg	Asp	Val	Leu	Asn	Ile	Leu	Gly	Asp	Glu	Val	Met	Ala	Asp	Trp	Phe
	370					375					380				
Arg	Ala	Ala	Lys	Glu	Cys	Asp	Pro	Glu	Ala	Arg	Met	Phe	Ile	Asn	Glu
385					390					395					400
Tyr	Asp	Ile	Leu	Ala	Asn	Gly	Ala	Asn	Leu	Arg	Lys	Gln	Asn	Ala	
				405					410				415		
Tyr	Tyr	Arg	Met	Ile	Glu	Met	Leu	Leu	Lys	Leu	Glu	Ala	Pro	Val	Glu
			420					425					430		
Gly	Ile	Gly	Phe	Gln	Gly	His	Phe	Asp	Thr	Ala	Thr	Pro	Pro	Glu	Arg
		435					440					445			
Met	Leu	Glu	Ile	Met	Asn	Arg	Tyr	Ala	Arg	Leu	Gly	Leu	Pro	Ile	Ala
	450					455					460				
Ile	Thr	Glu	Tyr	Asp	Phe	Ala	Thr	Val	Asp	Glu	Glu	Leu	Gln	Ala	Gln
465					470					475					480
Phe	Thr	Arg	Asp	Leu	Met	Ile	Leu	Ala	Phe	Ser	His	Pro	Ala	Val	Ser
				485					490					495	

Asp Phe Leu Met Trp Gly Phe Trp Glu Gly Ser His Trp Lys Pro Leu
 500 505 510
 Gly Ala Met Ile Arg Arg Asp Trp Ser Glu Lys Pro Met Tyr Arg Val
 515 520 525
 Trp Arg Glu Leu Ile Phe Glu Arg Trp Gln Thr Asp Glu Thr Gly Val
 530 535 540
 Thr Pro Glu His Gly Ala Ile Tyr Val Arg Gly Phe Lys Gly Asp Tyr
 545 550 555 560
 Glu Ile Thr Val Lys Ala Gly Gly Gln Glu Val Arg Val Pro Tyr Thr
 565 570 575
 Leu Lys Glu Asp Gly Gln Val Leu Trp Val Thr Val Gly Gly Thr Ser
 580 585 590
 Glu Glu Gln Ala Pro
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<210> 351
 <211> 1860
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<400> 351
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 ctgctggccg tcagtcttgt ggcctgcggg ggcaataatg accaagatcc gccgaccccg 120
 gagccaactc cggtcccaac gccgactcca actccaaccc cgaccccgac tccggagcca 180
 accccgactc cgactccgga gccactcccg actccagagc caactccgac gccgaccccg 240
 gaaccaacac cgacgccgga gccgacgcca acaccggatc ccggggccga ctaccagccg 300
 cccagcaatg acattgccgt caatggcgac gtggaaaagc gtactaccaa ctgggggtgca 360
 cgcggttcgg catccattag ccgagtcact ttagagagct ttgaaggtga tgccagcttg 420
 agtggtaccg gccgagaaga cgactggcat ggcgccacct tctctgtagg ccatctgacc 480
 ccgggtaata gctatgaagt ggctgcgtgg gtcaagttag cctcaggcga gcccaacaca 540
 gtggtcaaaa tcacgggtaa gcgcgagggc gagagcgcga cttacgaaga gtacacggat 600
 gtcggtacgg cattggctac cgacggtagc tggaccgaaa ttaccggcac ttatattcct 660
 gatagcgcca gccatttga atattttatt gtggagacc aagagggtgg accgaccgtt 720
 agcttctacg tggacgcgtt ttcagtggcc ggtgaggtgg aagatacgcc agcgccaacg 780
 ccgcccccaa ccgctccgcc accgagtggc tcaggcctag cggaactagt ggatttcccg 840
 gtgggcgttg ccgttgcggt agctagtttt gccaaataacg atttcctgag taacacgcaa 900
 caacaagata tcgtgcttaa caattttagt gaaattgttg cggagaatca gatgaagatg 960
 gaattatttca acgatgacta ctccaacccc agggcagatc aactggtcag ctgggccaat 1020
 gagcgaggta ttcgggttca cggccacgct ttggtctggc acgcgcaagc agcgtcatgg 1080
 gtcagtcctc cggtaaagcaa ctttcgcgag cgttatgtca accatgttcg tgggtgtggca 1140
 tcccggatcg cggacacggt agtaagctgg gatgtcgtca atgaagcttt gaccgatgat 1200
 gatgtctccc cgggtggaag ctactaccgg caatctgagt tctaccgaca gttcaatggc 1260
 ccagagttca ttgatattcg tttccgtgaa gctcgagagg cagcccccaa tgcgctgctt 1320
 tactacaacg actacaatat tgagaacgga ctggacaaaa ccgatgggtt gattcagcta 1380
 cttgagaggt tgagggataa tgacgtgccc attgatggcg tgggcttcca aatgcatggt 1440
 ttggttgagt ggcccgatat cagcactatt cgacgttcct gggagcgcgc attagcgggt 1500
 gaccccgatg accgtatgct tttaaaaata acggaactcg atgtgcgtat caacaatccc 1560
 tacgacgata atctcgaaag aggcacgttt cactccagcc ggggtgactg cgatgacatt 1620
 tccgggggtc gcgaaggctt tgagcggcaa gccgctcggt accgggagat tattgaggcc 1680
 tactttgacg tcgtgccacc gcaccgccga ggtggcatca gtgtttgggg tattgccgac 1740
 cattatagtt ggtattatac ccatgaaggc tatgtcgatt ggcccccttt gtgggacagg 1800
 aacctacagc caaagcctgc ttacaacgct gtttatgaag ctctgcagca gggccaataa 1860

<210> 352
 <211> 619
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<221> SIGNAL
 <222> (1)...(73)

<400> 352
 Met His Leu Pro Asn Tyr Arg Ser Leu Ala Thr Ala Leu Ser Arg Tyr

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			20						25					30		
Asn	Asp	Gln	Asp	Pro	Pro	Thr	Pro	Glu	Pro	Thr	Pro	Val	Val	Pro	Thr	Pro
		35					40					45				
Thr	Pro	Thr	Pro	Thr	Pro	Thr	Pro	Thr	Pro	Glu	Pro	Thr	Pro	Thr	Pro	Pro
	50					55					60					
Thr	Pro	Glu	Pro	Thr	Pro	Thr	Pro	Glu	Pro	Thr	Pro	Thr	Pro	Thr	Pro	Pro
65					70					75						80
Glu	Pro	Thr	Pro	Thr	Pro	Glu	Pro	Thr	Pro	Thr	Pro	Asp	Pro	Gly	Ala	
				85					90					95		
Asp	Tyr	Gln	Pro	Pro	Ser	Asn	Asp	Ile	Ala	Val	Asn	Gly	Asp	Val	Glu	
		100					105					110				
Ser	Gly	Thr	Thr	Asn	Trp	Gly	Ala	Arg	Gly	Ser	Ala	Ser	Ile	Ser	Arg	
		115					120					125				
Val	Thr	Leu	Glu	Ser	Phe	Glu	Gly	Asp	Ala	Ser	Leu	Ser	Val	Thr	Gly	
	130					135					140					
Arg	Glu	Asp	Asp	Trp	His	Gly	Ala	Thr	Phe	Ser	Val	Gly	His	Leu	Thr	
145					150					155					160	
Pro	Gly	Asn	Ser	Tyr	Glu	Val	Ala	Ala	Trp	Val	Lys	Leu	Ala	Ser	Gly	
			165						170					175		
Glu	Pro	Asn	Thr	Val	Val	Lys	Ile	Thr	Gly	Lys	Arg	Glu	Gly	Glu	Ser	
		180						185					190			
Ala	Thr	Tyr	Glu	Glu	Tyr	Thr	Asp	Val	Gly	Thr	Ala	Leu	Ala	Thr	Asp	
		195					200					205				
Gly	Ser	Trp	Thr	Glu	Ile	Thr	Gly	Thr	Tyr	Ile	Pro	Asp	Ser	Ala	Ser	
	210					215					220					
Pro	Phe	Glu	Tyr	Phe	Ile	Val	Glu	Thr	Gln	Glu	Gly	Gly	Pro	Thr	Val	
225					230					235					240	
Ser	Phe	Tyr	Val	Asp	Ala	Phe	Ser	Val	Ala	Gly	Glu	Val	Glu	Asp	Thr	
			245						250					255		
Pro	Ala	Pro	Thr	Pro	Pro	Pro	Thr	Ala	Pro	Pro	Pro	Ser	Gly	Ser	Gly	
		260						265					270			
Leu	Ala	Glu	Leu	Val	Asp	Phe	Pro	Val	Gly	Val	Ala	Val	Ala	Val	Ala	
	275						280				285					
Ser	Phe	Ala	Asn	Asn	Asp	Phe	Leu	Ser	Asn	Thr	Gln	Gln	Gln	Asp	Ile	
	290					295					300					
Val	Leu	Asn	Asn	Phe	Ser	Glu	Ile	Val	Ala	Glu	Asn	Gln	Met	Lys	Met	
305				310						315					320	
Glu	Tyr	Phe	Asn	Asp	Asp	Tyr	Ser	Asn	Pro	Arg	Ala	Asp	Gln	Leu	Val	
			325						330				335			
Ser	Trp	Ala	Asn	Glu	Arg	Gly	Ile	Arg	Val	His	Gly	His	Ala	Leu	Val	
		340						345					350			
Trp	His	Ala	Gln	Ala	Ala	Ser	Trp	Val	Ser	Pro	Pro	Val	Ser	Asn	Phe	
	355						360					365				
Arg	Glu	Arg	Tyr	Val	Asn	His	Val	Arg	Gly	Val	Ala	Ser	Arg	Tyr	Ala	
	370					375					380					
Asp	Thr	Val	Val	Ser	Trp	Asp	Val	Val	Asn	Glu	Ala	Leu	Thr	Asp	Asp	
385					390					395					400	
Asp	Val	Ser	Pro	Gly	Gly	Ser	Tyr	Tyr	Arg	Gln	Ser	Glu	Phe	Tyr	Arg	
			405						410					415		
Gln	Phe	Asn	Gly	Pro	Glu	Phe	Ile	Asp	Ile	Ala	Phe	Arg	Glu	Ala	Arg	
		420						425					430			
Glu	Ala	Ala	Pro	Asn	Ala	Leu	Leu	Tyr	Tyr	Asn	Asp	Tyr	Asn	Ile	Glu	
	435						440					445				
Asn	Gly	Leu	Asp	Lys	Thr	Asp	Gly	Leu	Ile	Gln	Leu	Leu	Glu	Arg	Leu	
	450					455					460					
Arg	Asp	Asn	Asp	Val	Pro	Ile	Asp	Gly	Val	Gly	Phe	Gln	Met	His	Val	
465					470					475					480	
Leu	Leu	Asp	Trp	Pro	Asp	Ile	Ser	Thr	Ile	Arg	Arg	Ser	Trp	Glu	Arg	
			485						490					495		
Ala	Leu	Ala	Val	Asp	Pro	Asp	Asp	Arg	Met	Leu	Leu	Lys	Ile	Thr	Glu	
		500						505					510			
Leu	Asp	Val	Arg	Ile	Asn	Asn	Pro	Tyr	Asp	Asp	Asn	Leu	Glu	Arg	Gly	
	515						520					525				
Ile	Val	His	Ser	Ser	Arg	Gly	Asp	Cys	Asp	Asp	Ile	Ser	Gly	Val	Cys	
	530					535					540					
Glu	Gly	Phe	Glu	Arg	Gln	Ala	Ala	Arg	Tyr	Arg	Glu	Ile	Ile	Glu	Ala	
545					550					555					560	

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Trp Lys Asp Ser Gly Ser Ala Thr Met Thr Leu Ala Ala Gly Gly Arg
 35 40 45
 Tyr Thr Ser Gln Trp Thr Asn Asn Thr Asn Trp Val Gly Gly Lys
 50 55 60
 Gly Trp Asn Pro Gly Asn Ser Thr Arg Val Ile Ser Tyr Ser Gly Asn
 65 70 75
 Tyr Gly Val Ser Asn Ser Gln Asn Ser Tyr Leu Ala Leu Tyr Gly Trp
 85 90 95
 Thr Arg Ser Pro Ile Glu Tyr Tyr Val Ile Glu Ser Tyr Gly Ser
 100 105 110
 Tyr Asn Pro Ala Ser Cys Ser Gly Gly Thr Asn Met Gly Ser Phe Gln
 115 120 125
 Ser Asp Gly Ala Thr Tyr Asp Val Arg Arg Cys Gln Arg Val Gln Gln
 130 135 140
 Pro Ser Ile Asp Gly Thr Gln Thr Phe Tyr Gln Tyr Phe Ser Val Arg
 145 150 155 160
 Asn Pro Lys Lys Gly Phe Gly Gln Ile Ser Gly Thr Ile Thr Phe Ala
 165 170 175
 Asn His Ala Ala Phe Trp Ala Ser Lys Gly Met Asn Leu Gly Ala His
 180 185 190
 Asn Tyr Gln Val Met Ala Thr Glu Gly Tyr Gln Ser Thr Gly Ser Ser
 195 200 205
 Asp Ile Thr Val Ser Glu Gly Pro Ile Asn Gly Gly Thr Ser Ser Thr
 210 215 220
 Pro Pro Val Thr Thr Ser Ser Ser Ala Ser Ser Val Ala Thr Gly Gly
 225 230 235 240
 Gly Asn Thr Gly Ser Gly Val Val Val Arg Ala Arg Gly Val Ala Gly
 245 250 255
 Gly Glu His Ile Asn Leu Arg Ile Gly Gly Asn Thr Val Ala Ser Trp
 260 265 270
 Asn Leu Thr Thr Ser Phe Gln Asp Leu Ser Tyr Ser Gly Thr Ala Ser
 275 280 285
 Gly Asp Ile Gln Val Gln Tyr Asp Asn Asp Gly Gly Ser Arg Asp Val
 290 295 300
 Val Val Asp Tyr Ile Arg Val Asn Gly Glu Thr Arg Gln Ala Glu Asp
 305 310 315 320
 Met Ser Tyr Asn Thr Ala Leu Tyr Ala Asn Gly Ser Cys Gly Gly Gly
 325 330 335
 Gly Asn Ser Glu Leu Met His Cys Asn Gly Val Ile Gly Phe Gly Tyr
 340 345 350
 Thr Tyr Asp Cys Phe Ser Gly Asn Cys Ser Gly Gly Ser Thr Gly Gly
 355 360 365
 Gly Asn Thr Gly Thr Ser Ser Ser Ala Ala Ser Ala Gly Gly Gly Asn
 370 375 380
 Ser Asn Cys Ser Gly Tyr Val Gly Ile Thr Phe Asp Asp Gly Pro Thr
 385 390 395 400
 Ala Asn Thr Pro Thr Leu Val Asn Leu Leu Lys Gln Asn Asn Leu Thr
 405 410 415
 Pro Val Thr Trp Phe Asn Gln Gly Asn Asn Val Val Ala Asn Ala Asn
 420 425 430
 Tyr Met Ala Gln Gln Leu Ser Val Gly Glu Val His Asn His Ser Tyr
 435 440 445
 Ser His Pro Gln Met Gly Ser Met Thr Tyr Gln Gln Val Tyr Asp Glu
 450 455 460
 Leu Asn Arg Ala Asn Gln Ala Ile Gln Thr Ala Gly Ala Pro Lys Pro
 465 470 475 480
 Thr Leu Phe Arg Pro Pro Tyr Gly Thr Val Asn Ser Thr Ile Gln Gln
 485 490 495
 Ala Ala Gln Ala Leu Gly Leu Arg Val Ile Thr Trp Asp Val Asp Ser
 500 505 510
 Gln Asp Trp Asn Gly Ala Thr Ala Ser Ala Ile Ala Ser Ala Ala Asn
 515 520 525
 Arg Leu Thr Asn Gly Gln Val Ile Leu Met His Asp Gly Ser Tyr Thr
 530 535 540
 Asn Thr Asn Ala Ala Ile Ala Gln Ile Ala Ser Ser Leu Arg Ala Lys
 545 550 555 560
 Gly Leu Cys Pro Gly Arg Ile Asp Pro Ala Thr Gly Arg Ala Val Ala
 565 570 575
 Pro Ala Gly Gly Asn Thr Gly Gly Gly Thr Val Ser Ser Ser Thr Arg

580 585 590
 Ser Ser Thr Pro Val Val Val Ser Ser Ser Arg Ser Ser Ser Ser Val
 595 600 605
 Ala Ala Gly Gly Ala Cys Gln Cys Asn Trp Trp Gly Thr Arg Tyr Pro
 610 615 620
 Ile Cys Thr Ser Thr Ala Ser Gly Trp Gly Trp Glu Asn Asn Arg Ser
 625 630 635 640
 Cys Ile Thr Thr Ser Thr Cys Asn Ser Gln Gly Pro Gly Gly Gly Gly
 645 650 655
 Val Val Cys Asn
 660

<210> 355
 <211> 1125
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

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 tccctcaaag aggtctgcgc ttcttatttc gagatcggcg cggccgtcga gccgtatcag 180
 ttatctcttc caccacacga tgccttcttg cggaacatt ttaactgcct cgtggcggag 240
 aacgtcatga agccgcctc catccagcct tcggagggggt atttcaactg gaccgaagca 300
 gacaagatcg tgaactacgc caaagcccac gggatgaagc tccgcttcca taccctcgtc 360
 tggcataatc aggtcccga ttggttcttc gcgggtaacg acaaaaccct ctttttgag 420
 cgcttgga atcatatccg gactatcatt aaaagatatg gcgataaggt cgactattgg 480
 gacgtggtaa atgaggctat agacccgagc caaccggatg gcatgaggag gagcaaattg 540
 taccagatca ccgggaagga ctacatcaag accgccttcc ggttggcaga cgacgagctc 600
 aggaagaatg ggtggaggaa agaaggctcg cagctctata tcaacgacta caacacccat 660
 gatccgacga agagagagta catctggcgc ttgatcgatg agcttcaaac ggaagggatt 720
 cccgtcgacg gagtaggcca ccagacgcat atcaatatcg aatggccgcc cgtaaacagg 780
 atcgtggact cgatccgctt cttcggggaa aaaggcctcg ataaccagg gaccgagctg 840
 gatgtgagca tatatacga tagatccagt tcctacggga gttaccaagc gatcccgag 900
 gaagtcttca tcaagcagg taatcgctac aaggaaactt ttgaagggtc aaaaagtgt 960
 aaaaactacc tcagcaacgt caccttcttg ggcattggcg acgatcatac ctggctgaac 1020
 cattggccca tcgaacggcc cgatgctcct cttctttcg atatctatct caaggccaag 1080
 ccggcgctatt gggggatcgt ggatgctttg aagctttcgc ggtga 1125

<210> 356
 <211> 374
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<221> SIGNAL
 <222> (1)...(21)

<400> 356
 Met Lys Arg Thr Ile Phe Leu Arg Leu Leu Ala Gly Ala Leu Leu Ser
 1 5 10 15
 Ala Ala Ala Leu Ala Ala Gly Gly Cys Arg Pro Ser Ser Pro Pro Lys
 20 25 30
 Val Glu Ile Glu Ala Asn Ile Pro Ser Leu Lys Glu Val Cys Ala Ser
 35 40 45
 Tyr Phe Glu Ile Gly Ala Ala Val Glu Pro Tyr Gln Leu Ser Ser Pro
 50 55 60
 Pro His Asp Ala Leu Leu Arg Lys His Phe Asn Cys Leu Val Ala Glu
 65 70 75 80
 Asn Val Met Lys Pro Ala Ser Ile Gln Pro Ser Glu Gly Tyr Phe Asn
 85 90 95
 Trp Thr Glu Ala Asp Lys Ile Val Asn Tyr Ala Lys Ala His Gly Met
 100 105 110
 Lys Leu Arg Phe His Thr Leu Val Trp His Asn Gln Val Pro Asp Trp
 115 120 125

Phe Phe Ala Gly Asn Asp Lys Thr Leu Leu Leu Gln Arg Leu Glu Asn
 130 135 140
 His Ile Arg Thr Ile Ile Lys Arg Tyr Gly Asp Lys Val Asp Tyr Trp
 145 150 155 160
 Asp Val Val Asn Glu Ala Ile Asp Pro Ser Gln Pro Asp Gly Met Arg
 165 170 175
 Arg Ser Lys Trp Tyr Gln Ile Thr Gly Lys Asp Tyr Ile Lys Thr Ala
 180 185 190
 Phe Arg Val Ala Asp Asp Glu Leu Arg Lys Asn Gly Trp Arg Lys Glu
 195 200 205
 Gly Arg Gln Leu Tyr Ile Asn Asp Tyr Asn Thr His Asp Pro Thr Lys
 210 215 220
 Arg Glu Tyr Ile Trp Arg Leu Ile Asp Glu Leu Gln Thr Glu Gly Ile
 225 230 235 240
 Pro Val Asp Gly Val Gly His Gln Thr His Ile Asn Ile Glu Trp Pro
 245 250 255
 Pro Val Asn Gln Ile Val Asp Ser Ile Arg Phe Phe Gly Glu Lys Gly
 260 265 270
 Leu Asp Asn Gln Val Thr Glu Leu Asp Val Ser Ile Tyr Thr Asp Arg
 275 280 285
 Ser Ser Ser Tyr Gly Ser Tyr Gln Ala Ile Pro Gln Glu Val Phe Ile
 290 295 300
 Lys Gln Gly Asn Arg Tyr Lys Glu Leu Phe Glu Leu Lys Ser Val
 305 310 315 320
 Lys Asn Tyr Leu Ser Asn Val Thr Phe Trp Gly Met Ala Asp Asp His
 325 330 335
 Thr Trp Leu Asn His Trp Pro Ile Glu Arg Pro Asp Ala Pro Leu Pro
 340 345 350
 Phe Asp Ile Tyr Leu Lys Ala Lys Pro Ala Tyr Trp Gly Ile Val Asp
 355 360 365
 Ala Leu Lys Leu Ser Arg
 370

<210> 357
 <211> 1155
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<400> 357
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 ctgccggcct gcgaagccgg tccgccggaa aatacaagtt cgtccctgca ggaggcatat 120
 gcagatgtgt ttctgacggt caccgcgctc aatctggcac agatcgacgg aagggatgaa 180
 caaggcgtac gtctggtgga gcggcatttt aatgcgatta caccagagaa cattacaaaa 240
 tggggaccga tacatccggc gccgggagaa tataatttcg gaccggccga ccggtttgtt 300
 gaattcgggtg aagcccacga catgttcattg ataggccata cgcttgatg gcacagccag 360
 acgcccggat gggatattcga ggatgaagcc ggaaatccgc tcggccgcga cgagctcatc 420
 gaacgcattg gcgatcatat ccataccgtc gtcggacggt accggggtag aatacacgca 480
 tgggacgtcg tcaacgaagc gttgaatgaa gacggaaccc tgcgggaatc cccctggtag 540
 cgtatcatcg gcgaggatta cctgttgaaa gcgttcgagt tcgcgcatga agcggacccg 600
 gatgccgagc tgtactataa cgattattct ctcgaaaatc ccgccaagcg ggcgggggag 660
 gtacgcctgg tccggtacct gcaggagaac ggggcgcgca tacacgggat cggtagccag 720
 ggacactact ctcttgactg gccatcgctc gacgagatcg aaagaaccat caccgatttc 780
 gccgcgttg acgtggacgt catggttacc gaacttgaaa tcgacgtcct cccttccgag 840
 ttcgagtatc agggggccga tatgacgatg cgggcggaac tcgaagagcg gttgaatccg 900
 tatcccagc aactgcccgc cgaggtcgat gaagcgcta cacagcggtg tcgggacatc 960
 ttcgaggtat ttctgcggca cagcgacgtt cttacgcgag taacgttctg gggggtgacc 1020
 gatggagatt cgtggaagaa taactggcgg gtaccgggaa ggacgaatta tccgctgctg 1080
 ttcgaccgag aatggcagcc aaaaccagca ttttattccg tgatcgaagt tgcggatgag 1140
 atgctgaatg aataa 1155

<210> 358
 <211> 384
 <212> PRT
 <213> Unknown

<220>

<223> obtained from an environmental sample.

<221> SIGNAL

<222> (1)...(25)

<400> 358

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Met Asn Asn Phe Arg Asn Thr Phe Leu Ile Val Val Val Leu Ala Val
 1      5      10      15
Val Val Gly Val Leu Pro Ala Cys Glu Ala Gly Pro Pro Glu Asn Thr
 20      25      30
Ser Ser Ser Leu Gln Glu Ala Tyr Ala Asp Val Phe Leu Ile Gly Thr
 35      40      45
Ala Leu Asn Leu Ala Gln Ile Asp Gly Arg Asp Glu Gln Gly Val Arg
 50      55      60
Leu Val Glu Arg His Phe Asn Ala Ile Thr Pro Glu Asn Ile Thr Lys
 65      70      75      80
Trp Gly Pro Ile His Pro Ala Pro Gly Glu Tyr Asn Phe Gly Pro Ala
 85      90      95
Asp Arg Phe Val Glu Phe Gly Glu Ala His Asp Met Phe Met Ile Gly
100      105      110
His Thr Leu Val Trp His Ser Gln Thr Pro Gly Trp Val Phe Glu Asp
115      120      125
Glu Ala Gly Asn Pro Leu Gly Arg Asp Glu Leu Ile Glu Arg Met Arg
130      135      140
Asp His Ile His Thr Val Val Gly Arg Tyr Arg Gly Arg Ile His Ala
145      150      155      160
Trp Asp Val Val Asn Glu Ala Leu Asn Glu Asp Gly Thr Leu Arg Glu
165      170      175
Ser Pro Trp Tyr Arg Ile Ile Gly Glu Asp Tyr Leu Leu Lys Ala Phe
180      185      190
Glu Phe Ala His Glu Ala Asp Pro Asp Ala Glu Leu Tyr Tyr Asn Asp
195      200      205
Tyr Ser Leu Glu Asn Pro Ala Lys Arg Ala Gly Ala Val Arg Leu Val
210      215      220
Arg Tyr Leu Gln Glu Asn Gly Ala Pro Ile His Gly Ile Gly Thr Gln
225      230      235      240
Gly His Tyr Ser Leu Asp Trp Pro Ser Leu Asp Glu Ile Glu Arg Thr
245      250      255
Ile Thr Asp Phe Ala Ala Leu Asp Val Asp Val Met Val Thr Glu Leu
260      265      270
Glu Ile Asp Val Leu Pro Ser Ala Phe Glu Tyr Gln Gly Ala Asp Ile
275      280      285
Ala Met Arg Ala Glu Leu Glu Glu Arg Leu Asn Pro Tyr Pro Asp Glu
290      295      300
Leu Pro Ala Glu Val Asp Glu Ala Leu Thr Gln Arg Tyr Arg Asp Ile
305      310      315      320
Phe Glu Val Phe Leu Arg His Ser Asp Val Leu Thr Arg Val Thr Phe
325      330      335
Trp Gly Val Thr Asp Gly Asp Ser Trp Lys Asn Asn Trp Pro Val Pro
340      345      350
Gly Arg Thr Asn Tyr Pro Leu Leu Phe Asp Arg Glu Trp Gln Pro Lys
355      360      365
Pro Ala Phe Tyr Ser Val Ile Glu Val Ala Asp Glu Met Leu Asn Glu
370      375      380

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<210> 359

<211> 2724

<212> DNA

<213> Unknown

<220>

<223> obtained from an environmental sample.

<400> 359

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gtctacaccg acttcgagaa cgacagcatc gagccgtggg cgcagtccgg cggcccgcag      180
ctgaacatcg tcgaggtcga cggcgggcac gcgctgcgcg tcggcaacca ccagaacacc      240
tgggacggca tccagaccca gcccggcacc acgcggatcg agccgggtgt cgagcacacc      300

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ctgtcgaatgc gcgtccggct cgtgggacgac ggcacggcga cgacgccggc ccggtggatc 360
ggccgcgacc ccggagccga gaacggctac cagtggatcg gtaacacgac gatctcgacc 420
gagagctgga cgaccatccg gggaaacgtg ctccctcggg cggacgcgaa cgcctcggag 480
ctctatgtct accccgaggt cacaccgggt gccggcttcg actacctcct cgatgacctg 540
ctcatcgagc gtgctgcccc tgtcgacggc ggcgccccgg gcaccgtcgt ctacaccgct 600
ggattcgaga cggacctgga cggctgggag gcacgcgccg acggcgctcg tgtcggccag 660
ctcgaccgga ccgacgcgga gtcggccgag ggcgactggt ccgcatcggt gaccgaccgc 720
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gacacgtcgg acgtgcccc ggggtgtcgc atcgaccag gtgagacctc cggcagcctc 1140
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gcgtgggtacg acgcggggg caacttcgc atccacccgc aggccgcgc catcatggac 1260
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tggggcgagt acggcgccga caaccgcctc gtggcctggg acgtcgtcaa cgaggtcgtc 1500
tccgacagcg gcgagcacag cgacggcctg cgccgtagcc gctggtagca cgtgctgggc 1560
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gacgaccgca gctggcgcag cgtcaggcg ccgctgctgt tcgacgggg cctgcaggcc 2040
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cagttcgacc tccggtatcat cgacggcgcc accacctcgg ggtggaacgt cgaaggtgtc 2460
ctgggcaccc tgacctgggt cgaggagctg tccttcgtcg aggtcgtcga ggcggccgac 2520
cggccgacca tcgacggcga gatcgacgcc gtgtgggagg acgccaacgt cgtcaccacg 2580
gacgtccgta tcgagggcgc tgcgtgacgg gcgaaggccg agatccggac cctgtgggac 2640
aacaacacgc tgttcgtcct cgcggagatc gccgacccgg tgatcgacgt gacggcctcc 2700
agcccgtggg agcaggactc gctc 2724

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<210> 360
 <211> 908
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<221> SIGNAL
 <222> (1)...(31)

<400> 360
 Met Thr Arg Ser Val Arg Pro Arg Ala Trp Gly Ala Gly Leu Leu Ala
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 Leu Ala Met Val Ala Thr Val Ala Pro Thr Ala Thr Gly His Ser His
 20 25 30
 Asp Thr Ala Glu Pro Val Val Val Tyr Thr Asp Phe Glu Asn Asp
 35 40 45
 Ser Ile Glu Pro Trp Ala Gln Ser Gly Gly Pro Thr Leu Asn Ile Val
 50 55 60
 Glu Val Asp Gly Gly His Ala Leu Arg Val Gly Asn His Gln Asn Thr
 65 70 75 80
 Trp Asp Gly Ile Gln Thr Gln Pro Ala Thr Thr Arg Ile Glu Pro Gly
 85 90 95
 Val Glu His Thr Leu Ser Met Arg Val Arg Leu Val Gly Asp Gly Thr
 100 105 110
 Ala Thr Thr Pro Ala Arg Trp Ile Gly Arg Asp Pro Gly Ala Glu Asn

Gly	Tyr	115	Gln	Trp	Ile	Gly	Asn	120	Thr	Thr	Ile	Ser	Thr	125	Glu	Ser	Trp	Thr
Thr	130	Ile	Arg	Gly	Thr	Trp	135	Leu	Pro	Arg	Ala	Asp	140	Ala	Asn	Ala	Ser	Glu
145	Tyr	Val	Tyr	Pro	Glu	Val	Thr	Pro	Val	Ala	Gly	Phe	Asp	Tyr	Leu			
Leu	Asp	Asp	Leu	165	Ile	Glu	Arg	Ala	170	Ala	Pro	Val	Asp	Gly	Ala			
Pro	Gly	Thr	Val	Val	Tyr	Thr	Ala	Gly	185	Phe	Glu	Thr	Asp	190	Leu	Asp	Gly	
Trp	Glu	Ala	Arg	Ala	Asp	Gly	200	Val	Gly	Val	Gly	Gln	Leu	Asp	Arg	Thr		
Asp	210	Ala	Glu	Ser	Ala	Glu	Gly	Asp	Trp	Ser	Ala	Ile	Val	Thr	Asp	Arg		
225	Thr	Ser	His	Gly	His	Gly	230	Leu	Arg	Leu	Asp	Val	Thr	Asp	Ile	Met	Asp	
Ala	Gly	Val	Thr	245	Glu	Ile	Ser	Ala	250	Gln	Val	Lys	Phe	Ala	Gly	Thr		
Gly	Gly	Pro	Gly	Asn	Ile	Trp	Leu	Ser	Gln	Glu	Leu	Val	Val	Asp	Gly			
Gly	Ser	275	Tyr	Gly	Thr	Val	280	Gln	Val	Pro	Gly	Val	Thr	Ser	Thr			
Ala	Trp	Thr	Gln	Ile	Thr	Thr	Asn	Tyr	Val	Thr	Pro	Thr	Ala	Asp	Gln			
305	Leu	Phe	Leu	Tyr	Phe	Glu	Thr	Asn	Trp	Pro	Asp	Gly	Ile	Glu	Asp	Asp		
Phe	Leu	Leu	Asp	Asp	Val	Arg	Ile	Arg	Val	Ala	Pro	Arg	Ala	Ile	Ile			
Gln	Glu	Asp	Leu	Thr	Pro	Leu	Met	Asp	Thr	Leu	Asp	Val	Pro	Met	Gly			
Val	Ala	Ile	Asp	Gln	Arg	Glu	Thr	Ser	Gly	Ser	Leu	Ala	Asp	Leu	Leu			
Leu	Leu	His	Phe	Asp	Gln	Val	Thr	Ala	Glu	Asn	His	Met	Lys	Pro	Glu			
385	Ala	Trp	Tyr	Asp	Ala	Ala	Gly	Asn	Phe	Arg	Ile	His	Pro	Gln	Ala	Arg		
Ala	Ile	Met	Asp	Phe	Ala	Ala	Glu	Asn	Asp	Leu	Arg	Val	Phe	Gly	His			
Val	Leu	Val	Trp	His	Gly	Gln	Thr	Pro	Asp	Phe	Phe	Phe	Thr	His	Ala			
Asp	Gly	Thr	Pro	Leu	Thr	Ser	Ser	Glu	Ala	Asp	Gln	Ala	Ile	Leu	Arg			
Asp	450	Arg	Met	Arg	Thr	His	Ile	Phe	Asn	Val	Ala	Glu	Ala	Leu	Ser	Glu		
465	Trp	Gly	Glu	Tyr	Gly	Gly	Asp	Asn	Pro	Leu	Val	Ala	Trp	Asp	Val	Val		
Asn	Glu	Val	Val	Ser	Asp	Ser	Gly	Glu	His	Ser	Asp	Gly	Leu	Arg	Arg			
Ser	Arg	Trp	Tyr	Asp	Val	Leu	Gly	Glu	Glu	Phe	Ile	Asp	Leu	Ala	Phe			
Ile	Tyr	Ala	Asn	Gln	Ala	Phe	Asn	Gly	Glu	Phe	Ala	Ala	Asp	Asp	Ala			
Asn	His	Pro	Val	Thr	Leu	Phe	Ile	Asn	Asp	Tyr	Asn	Thr	Glu	Gln	Ser			
545	Gly	Lys	Gln	Asn	Arg	Tyr	Ala	Ala	Leu	Ile	Asp	Arg	Leu	Ile	Glu	Arg		
Glu	Val	Pro	Ile	Asp	Ala	Val	Gly	His	Gln	Phe	His	Val	Ser	Leu	Ala			
Met	Pro	Ile	Ala	Asn	Leu	Arg	Gly	Ala	Leu	Glu	Arg	Phe	Gln	Asp	Thr			
Gly	Leu	Ile	Gln	Gly	Val	Thr	Glu	Leu	Asp	Val	Thr	Val	Gly	Asn	Asn			
Pro	Thr	Glu	Ala	Leu	Leu	Val	Glu	Gln	Gly	Tyr	Tyr	Tyr	Arg	Asp	Ala			
625	Phe	Arg	Leu	Phe	Arg	Glu	Phe	Thr	Glu	Asp	Leu	Tyr	Ser	Val	Thr	Val		
Trp	Gly	Leu	Thr	Asp	Asp	Arg	Ser	Trp	Arg	Ser	Ala	Gln	Ala	Pro	Leu			
			660					665										

Leu Phe Asp Ala Gly Leu Gln Ala Lys Pro Ala Tyr Tyr Gly Ala Ile
 675 680 685
 Asp Ala Asp Leu Asp Ala Arg Val Arg Ala Ala Tyr Val Phe Ala Glu
 690 695 700
 Asp Ile Ala Leu Asp Glu Ala Ala Leu Thr Ser Pro Thr Trp Asp Arg
 705 710 715 720
 Leu Pro Leu His Gln Ile Asp Gly Ala Gly Glu Phe Gln Leu Arg Trp
 725 730 735
 Ala Ala Asp His Leu Thr Val Phe Val His Val Thr Asp Gly Asp Glu
 740 745 750
 Val Glu Ile Val Leu Gly Asp Glu Thr Tyr Thr Val Ser Ser Asp Gly
 755 760 765
 Glu Gly Asp Leu Asp Ala Val Thr Ala Ala Gly Glu Asn Gly Ser Trp
 770 775 780
 Thr Ala Val Val Arg Val Pro Leu Thr Ala Glu Gln Gly Asp Thr Ala
 785 790 795 800
 Gln Phe Asp Leu Arg Ile Ile Asp Gly Ala Thr Thr Ser Gly Trp Asn
 805 810 815
 Val Glu Gly Val Leu Gly Thr Leu Thr Val Glu Glu Leu Ser Phe
 820 825 830
 Val Glu Val Val Glu Ala Ala Asp Arg Pro Thr Ile Asp Gly Glu Ile
 835 840 845
 Asp Ala Val Trp Glu Asp Ala Asn Val Val Thr Thr Asp Val Arg Ile
 850 855 860
 Glu Gly Ala Ala Asp Gly Ala Lys Ala Glu Ile Arg Thr Leu Trp Asp
 865 870 875 880
 Asn Asn Thr Leu Phe Val Leu Ala Glu Ile Ala Asp Pro Val Ile Asp
 885 890 895
 Val Thr Ala Ser Ser Pro Trp Glu Gln Asp Ser Leu
 900 905

<210> 361

<211> 5040

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 361

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ggttttgaaa	cgggattaga	tggcttcaaa	ggacggggta	gtgccacctt	aactcgaacg	180
actgatgaaa	cgcaagcagg	cgactatttcg	gttcttgtga	gcaatcggct	tgagcactgg	240
aatggggcat	cattgccact	tacaggcttc	gttctaccag	gtaatacata	tgaatttggt	300
ggttacataa	aagcaaaagc	agatgtagca	gacaattatg	tcattgagtg	tgagtacaat	360
gaggggattt	ctggaaatca	atatccatgg	atatctaatt	gtttgttaac	ggttcaagat	420
ggctttgttg	agtttagagg	tgaactaacc	atactagagg	atatgacgtc	ctttaattcta	480
aactttgaac	atcaaaatgc	tgaagtggaa	ttttatttag	attctgttca	ggttatttcta	540
atcgaagaag	gtcaagtcaa	tgacttacca	atgaatgtaa	gaagagcgcc	acttacactt	600
gctgaaactc	ccttacatga	gatttgggca	gatcacttta	ctattggcaa	tattttatacg	660
ccagggttttc	gcacagatat	acgtgggtgag	gtattagccc	atcattttta	tgtgatcaca	720
gctgaaaata	ttatgaagcc	agatcatttg	caaagggaa	aaggtatttt	tacttttagt	780
gcttccaacg	atatgatgga	atttgccaga	gcaaataatc	aagaagtcac	tggaataact	840
ttgggtgtggc	attctcaatc	cttcccatgg	tttgaagctt	taaatccaac	acgtgatgaa	900
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gatcctgaaa	attggcgctt	gcatttaagg	gataccaaat	ggttacgtgc	catttggtgat	1080
gatttatattg	ccatcgcttt	taacaaagcc	catgaaattg	atccagatgc	tattctttat	1140
tataatgatt	ataatgataa	tgactatttt	aaagcaacca	ttataaaagc	catgggtgcag	1200
gagttgcgta	atgaaggcgt	gcccattcat	cgtattggga	tgcaagggtca	ttataattta	1260
cagacaccat	taaactctat	tagaaccagc	gttgagcggt	ttagtgaat	tactgggtcat	1320
gaagatctac	cacctattgg	cattagtttc	acagaaattg	atgtaacggg	accagggttt	1380
gaaagtgcag	cccgtttacc	tgaagaggta	gaaattcgcc	aagctcagtt	ttatgctcaa	1440
ttaatgcaga	ttttaagaga	caacagcgat	gtgattcatc	gtgttacttt	ctgggggtatg	1500
tctgatcgtg	aatcatggcg	tgcagatcgt	catcctaaca	tgtagatcc	tcagtatggg	1560
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ccagagacgc	cagatgctca	aacagcctat	gcatctcaag	gtcaaccagt	tgtggggcag	1680
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gccaatgtca	gcgatgccac	accgaatgta	gcagcttcg	ctgcccata	gcaagactca	1860
cttgaggat	ttatttcaaa	tacggattca	agaatttcta	attatatgcc	aggtgactat	1920
caactgagat	ttaatcgtgc	cggcgtgcat	acatatgggt	cgactgggtc	gattgaaggt	1980
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gccagtggcc	gtatggcaga	aggaacaggt	aatcaaatc	gtagaatgca	gtggaatcaa	3060
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caaccaggtc	attggcgcac	gcaaattgca	acatcatc	catggttcca	agcatttaac	3840
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atcatcacct	tggatcaaac	attacttaaa	cgattaacag	acaaggcggc	tggaatcgaa	4980
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<210> 362
 <211> 1680
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<221> SIGNAL
 <222> (1)...(26)

<400> 362

Met Ala Arg Ser Lys Arg Val Leu Ala Trp Ile Met Ser Ser Val Leu
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 Leu Ile Ser Met Ala Met Pro Ser Phe Ala Ser Gly Asp Ser Ser Gln
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 Val Pro Arg Val Ile Phe Glu Thr Gly Phe Glu Thr Gly Leu Asp Gly
 35 40 45
 Phe Lys Gly Arg Gly Ser Ala Thr Leu Thr Arg Thr Thr Asp Glu Thr
 50 55 60
 Gln Ala Gly Asp Tyr Ser Val Leu Val Ser Asn Arg Leu Glu His Trp
 65 70 75 80
 Asn Gly Ala Ser Leu Pro Leu Thr Gly Phe Val Leu Pro Gly Asn Thr
 85 90 95
 Tyr Glu Phe Val Gly Tyr Ile Lys Ala Lys Ala Asp Val Ala Asp Asn
 100 105 110
 Tyr Val Met Ser Gly Glu Tyr Asn Glu Gly Ile Ser Gly Asn Gln Tyr
 115 120 125
 Pro Trp Ile Ser Asn Arg Leu Leu Thr Val Gln Asp Gly Phe Val Glu
 130 135 140
 Phe Arg Gly Glu Leu Thr Ile Leu Glu Asp Met Thr Ser Phe Asn Leu
 145 150 155 160
 Asn Phe Glu His Gln Asn Ala Glu Val Glu Phe Tyr Leu Asp Ser Val
 165 170 175
 Gln Val Ile Leu Ile Glu Glu Gly Gln Val Asn Asp Leu Pro Met Asn
 180 185 190
 Val Arg Arg Ala Pro Leu Thr Leu Ala Glu Thr Pro Leu His Glu Ile
 195 200 205
 Trp Ala Asp His Phe Thr Ile Gly Asn Ile Tyr Thr Pro Gly Phe Arg
 210 215 220
 Thr Asp Ile Arg Gly Glu Val Leu Ala His His Phe Asn Val Ile Thr
 225 230 235 240
 Ala Glu Asn Ile Met Lys Pro Asp His Leu Gln Arg Glu Gln Gly Ile
 245 250 255
 Phe Thr Phe Ser Ala Ser Asn Asp Met Met Glu Phe Ala Arg Ala Asn
 260 265 270
 Asn Gln Glu Val Ile Gly His Thr Leu Val Trp His Ser Gln Ser Phe
 275 280 285
 Pro Trp Phe Glu Ala Leu Asn Pro Thr Arg Asp Glu Ala Ile Ala Ile
 290 295 300
 Met His Ala His Ile Glu Thr Val Met Gly His Phe Asn Glu Asn Tyr
 305 310 315 320
 Pro Gly Val Ile Thr Gly Trp Asp Val Leu Asn Glu Ala Ile Gln Pro
 325 330 335
 Arg Gln Gly Gln Asp Pro Glu Asn Trp Arg Leu His Leu Arg Asp Thr
 340 345 350
 Lys Trp Leu Arg Ala Ile Gly Asp Asp Tyr Ile Ala Ile Ala Phe Asn
 355 360 365
 Lys Ala His Glu Met Asp Pro Asp Ala Ile Leu Tyr Tyr Asn Asp Tyr
 370 375 380
 Asn Asp Asn Asp Tyr Phe Lys Ala Thr Ile Ile Lys Ala Met Val Gln
 385 390 395 400
 Glu Leu Arg Asn Glu Gly Val Pro Ile His Arg Ile Gly Met Gln Gly
 405 410 415
 His Tyr Asn Leu Gln Thr Pro Leu Asn Ser Ile Arg Thr Ser Val Glu
 420 425 430
 Arg Phe Ser Glu Ile Thr Gly His Glu Asp Leu Pro Pro Ile Gly Ile
 435 440 445
 Ser Phe Thr Glu Ile Asp Val Thr Val Pro Gly Phe Glu Ser Ala Ala
 450 455 460
 Arg Leu Pro Glu Glu Val Glu Ile Arg Gln Ala Gln Phe Tyr Ala Gln
 465 470 475 480
 Leu Met Gln Ile Leu Arg Asp Asn Ser Asp Val Ile His Arg Val Thr
 485 490 495
 Phe Trp Gly Met Ser Asp Arg Glu Ser Trp Arg Ala Asp Arg His Pro
 500 505 510
 Asn Met Leu Asp Pro Gln Tyr Gly Pro Lys His Val Phe His Ala Ile
 515 520 525
 Ala Asn Pro Glu Ala Phe Leu Thr Ala Tyr Pro Leu Pro Glu Thr Pro

Ile Asp Thr Ala Gly Leu Pro Leu Pro Pro Gln Trp Asn Phe Asp Leu
 1090 1095 1100
 Pro Arg Leu Ser Glu Leu Phe Glu Pro Tyr Phe Gly Leu Gly Asn Ile
 1105 1110 1115 1120
 Tyr Ser Thr Glu Thr Leu Met Asn Ala Asn Glu Thr Lys Arg Ala Phe
 1125 1130 1135
 Leu His His Phe Asn Val Ile Thr Ala Glu Asn Gly His Lys Pro Ser
 1140 1145 1150
 Ser Ile Ala Gly Pro Glu Asn Ser Phe Thr Val Pro Glu Pro Glu Gln
 1155 1160 1165
 Phe Asn Phe Thr Asp Ala Asp Arg Ile Val Asn Phe Ala Val Glu Asn
 1170 1175 1180
 Asp Ile Glu Leu Val Gly His Ala Leu Val Trp His Ser Gln Ser Pro
 1185 1190 1195 1200
 Asn Trp Leu Phe Arg Ser Ala Ala Asn Thr Pro Leu Thr Arg Ala Glu
 1205 1210 1215
 Ala Lys Glu Arg Met Ala Tyr Tyr Met Lys Thr Val Ser Glu His Phe
 1220 1225 1230
 Glu Ala Gln Gly Thr Leu Gly Ala Phe Tyr Gly Trp Asp Val Val Asn
 1235 1240 1245
 Glu Ala Ile Ala Ser Gly Gly Gly Thr Phe Val Asp Gln Pro Gly His
 1250 1255 1260
 Trp Arg Thr Gln Met Arg Thr Ser Ser Pro Trp Phe Gln Ala Phe Asn
 1265 1270 1275 1280
 Asn Gly Leu Asp Val Glu Ala Gly Glu His Ala Ser Asp Tyr Ile Phe
 1285 1290 1295
 Tyr Ala Tyr Tyr Tyr Ala Arg Lys Tyr Phe Pro Thr Ser Ile Leu Tyr
 1300 1305 1310
 Tyr Asn Asp Tyr Asn Asp Glu Ile Pro Asn Lys Arg Asp Asn Ile Ala
 1315 1320 1325
 Gln Met Val Glu Glu Ile Asn Ala Leu Trp Glu Ala His Glu Glu Tyr
 1330 1335 1340
 Asp Gly Arg Leu Leu Ile Glu Ser Ile Gly Met Gln Ser His Tyr His
 1345 1350 1355 1360
 Met Glu Gly Trp Thr Ser Val Asp Asn Val Arg Ala Ala Leu Asp
 1365 1370 1375
 Arg Tyr Ile Ala Thr Gly Ala Arg Val Ser Val Thr Glu Leu Asp Ile
 1380 1385 1390
 Thr Tyr Gly Gly His Gly Ser Asn Ala Tyr Ala Ser Leu Thr Pro Glu
 1395 1400 1405
 Gln Leu Ala Ala Gln Ala Glu Arg Tyr Ala Glu Ile Phe Thr Leu Tyr
 1410 1415 1420
 Leu Glu Arg Ala Asp Gln Leu Ser Arg Val Ser Ile Trp Gly Met Ser
 1425 1430 1435 1440
 Asp Ala Asn Ser Trp Arg Ser Ser Gly Phe Pro Leu Leu Phe Asp Ser
 1445 1450 1455
 Ser Leu Asn Ala Lys Pro Ala Phe Asn Ala Ile Val Glu Leu Val Lys
 1460 1465 1470
 Asn Trp Glu Thr Pro Thr Val Val Ala Pro Val Ile Gln Thr Arg Thr
 1475 1480 1485
 Leu Ala Pro Leu Glu Ser Gly Glu Arg Val Phe Thr Met Leu Asp Val
 1490 1495 1500
 Val Arg Gly Ser Asn Ala Pro Val Trp Phe Ser Ile Thr Asp Gly Ala
 1505 1510 1515 1520
 Leu Pro Glu Gly Ile Ile Leu His Ser Arg Thr Gly Ile Leu Glu Gly
 1525 1530 1535
 Thr Pro Val Glu Asp Gly His Tyr Ser Phe Thr Val Thr Ala Arg Asn
 1540 1545 1550
 Tyr Gly Gly Ser Thr Ser Gln Ala Leu Thr Leu Thr Val Gly His Pro
 1555 1560 1565
 Val Ala Pro Pro Val Thr Pro Pro Val Thr Pro Pro Thr Val Ile Ile
 1570 1575 1580
 Asp Glu Ser Asp Ile Pro Gln Ala Gly Pro Gly Leu Arg Ala Pro Gln
 1585 1590 1595 1600
 Ile Val Val Thr Val Gln Glu Gly Ser Glu Val Thr Phe Asp Leu Glu
 1605 1610 1615
 Lys Leu Glu Glu Val Met Ala Ser Leu Ser Ser Gln Val Pro Leu Val
 1620 1625 1630
 Leu Asp Val Glu Leu Glu Asp Ser Ile Ile Thr Leu Asp Gln Thr Leu

1635 1640 1645
 Leu Lys Arg Leu Thr Asp Lys Ala Ala Gly Ile Glu Ile Gln Ala Asp
 1650 1655 1660
 Gly Phe Ser Tyr Met Leu Pro Ala Glu Val Leu Glu Ala Ile Leu Trp
 1665 1670 1675 1680

<210> 363
 <211> 1317
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<400> 363
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 tgtgtcgcgc tgttgagcgc ctgcggcagt agtagtagct ccctggatga tccgggtgct 180
 ggcagcagtt cttccagctc tgagagcagc caaagctcca gcgccagttc ccaggctgat 240
 ggcgacggta cccaggacag cctctacgcc caggcggact tccctgtagg ggttgcggtg 300
 caggtggcca attgggagcc tttcagcctg tttaccgcgc ccgatgccgc tgcgcgtcag 360
 aacctggttg cccgacactt ctccgaagtg accgcgacca acgtcatgaa aatgtcctat 420
 atgcgcacca acagtgggtg ttttaccgac gcgccggcgc gtccgctgat tgattttgcc 480
 cgcgccaatg gcatcaaagt gcacggtcac gcaactggtct ggcatgcgga ttatcagggtg 540
 ccaaattgtgt ttcgtgacta cgaaggggac aattggcagg ggcttttaac cgagcatgtc 600
 gagggcgtaa tggggctggt tgacgacacc gtggtaagtt gggatgtcgt aaacgaagcg 660
 gttgataccg gctcacctga cggctggcgc cggtcgattt tctataattt tgcgccgccc 720
 gaagcagggc aggtgccgga atatatggaa gtggcttacc aggccgctcg agaggccaat 780
 ccggaagtga cctctacta caacgatitt gacaacacgg ccaataccgg gcgcctcaac 840
 aagaccctgg aaattgccga tcgcctgaaa gagctggacg cgatcgacgg tatcgggttc 900
 cagatgcacg cctatatgaa ctacccgagt attgcgcagt ttcgcaatgc ctttcaggaa 960
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 ggtgtccggt actgccagat tgccgaggcc tatctggatg tcgttcctgc cgagctgcgg 1140
 ggtggtttca ccgtctgggg cctgaccgat gacgacagct ggctgatggg agcgttcgcg 1200
 tccgcaaccg gcgcccacaa cgaccaggtc tatccgggtg tgtttgacga taatctgcaa 1260
 gccaaagccc cggtcttttg cgtcaagcgc gccctccgcg gcgaaccctg cgagtaa 1317

<210> 364
 <211> 438
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<400> 364
 Met Thr Thr Arg Ala Gln Val Leu Asp Gln Ala Leu Ala Leu Gly His
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 Arg Cys Gly Trp Glu Lys Leu Ser Leu Asp Ala Ile Ala Arg Ala Leu
 20 25 30
 Gly Arg Phe Gly Ser Leu Ala Leu Cys Val Ala Leu Leu Ser Ala Cys
 35 40 45
 Gly Ser Ser Ser Ser Ser Leu Asp Asp Pro Gly Ala Gly Ser Ser Ser
 50 55 60
 Ser Ser Ser Glu Ser Ser Gln Ser Ser Ser Ala Ser Ser Gln Ala Asp
 65 70 75 80
 Gly Asp Gly Thr Gln Asp Ser Leu Tyr Ala Gln Ala Asp Phe Pro Val
 85 90 95
 Gly Val Ala Val Gln Val Ala Asn Trp Glu Pro Phe Ser Leu Phe Thr
 100 105 110
 Ala Pro Asp Ala Ala Ala Arg Gln Asn Leu Val Ala Arg His Phe Ser
 115 120 125
 Glu Val Thr Ala Thr Asn Val Met Lys Met Ser Tyr Met Arg Thr Asn
 130 135 140
 Ser Gly Gly Phe Thr Asp Ala Pro Ala Arg Pro Leu Ile Asp Phe Ala
 145 150 155 160
 Arg Ala Asn Gly Ile Lys Val His Gly His Ala Leu Val Trp His Ala
 165 170 175

Asp Tyr Gln Val Pro Asn Val Phe Arg Asp Tyr Glu Gly Asp Asn Trp
 180 185 190
 Gln Gly Leu Leu Thr Glu His Val Glu Gly Val Met Gly Leu Phe Asp
 195 200 205
 Asp Thr Val Val Ser Trp Asp Val Val Asn Glu Ala Val Asp Thr Gly
 210 215 220
 Ser Pro Asp Gly Trp Arg Arg Ser Ile Phe Tyr Asn Phe Ala Pro Pro
 225 230 235 240
 Glu Ala Gly Gln Val Pro Glu Tyr Ile Glu Val Ala Tyr Gln Ala Ala
 245 250 255
 Arg Glu Ala Asn Pro Glu Val Thr Leu Tyr Tyr Asn Asp Phe Asp Asn
 260 265 270
 Thr Ala Asn Thr Gly Arg Leu Asn Lys Thr Leu Glu Ile Ala Asp Arg
 275 280 285
 Leu Lys Glu Leu Asp Ala Ile Asp Gly Ile Gly Phe Gln Met His Ala
 290 295 300
 Tyr Met Asn Tyr Pro Ser Ile Ala Gln Phe Arg Asn Ala Phe Gln Glu
 305 310 315 320
 Val Val Asp Arg Asp Leu Lys Val Lys Val Thr Glu Leu Asp Ile Ala
 325 330 335
 Ile Val Asn Pro Tyr Gly Ser Ser Thr Pro Pro Pro Leu Pro Glu Phe
 340 345 350
 Asp Gln Ala Leu Ala Asp Ala Gln Gly Val Arg Tyr Cys Gln Ile Ala
 355 360 365
 Glu Ala Tyr Leu Asp Val Val Pro Ala Glu Leu Arg Gly Gly Phe Thr
 370 375 380
 Val Trp Gly Leu Thr Asp Asp Ser Trp Leu Met Gly Ala Phe Ala
 385 390 395 400
 Ser Ala Thr Gly Ala Gln Tyr Asp Gln Val Tyr Pro Val Leu Phe Asp
 405 410 415
 Asp Asn Leu Gln Ala Lys Pro Ala Phe Phe Gly Val Lys Arg Ala Leu
 420 425 430
 Arg Gly Glu Pro Cys Glu
 435

<210> 365
 <211> 3246
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<400> 365
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 agcaatactt cgtccatcac cactccggct gcggctccac agtcgcagcc acaaccaacg 180
 caagacgcaa acgctcccgc accgcttaaa gcggctttcc gggataagt tctcatcggc 240
 gcggtgctga gtgacgtgc gctgcgaggg agtgcgccc acaaggtggc gatagccacc 300
 acgcacttta acgcgtcac cgccgaaaac gccatgaagc cagacgcgat gcaaccgcgc 360
 gaagggcagt tcaacttcgc tgacggcgat cggctcgtcg aactcgccga aaaaagcggc 420
 ggtgtgcca tcggccacac gctggtgtgg cacgcgcaaa caccgaagt gttttttgaa 480
 gggccggatg gacagccgc gacgcgcgaa ctggctttgg agcgcgatg caaacacatt 540
 tccactgtgg tggggcgcta caaagggcgc atcaaggagt gggatgtggt gaacgaagcc 600
 atcaacgacg gaccgggtgt gctgcgtccc tctccctggc tcaaagccat cggcgaagat 660
 tacatcgccg aagccttcgc cgccgcgcac gccgccgacc ccgacgcgat tttgatttat 720
 aacgattaca acatcgaact gggctacaaa cggcccaaag cgctgcaact cctaaaatcg 780
 ctcattgacc agaaagtgcc gattcacgcc gtgggcattc agggctactg gcgcatggac 840
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 gtcatgatca cgaactcga catcgcgctg ctgcccagc gttatcaggg cgcgatatt 960
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 ttgcccggacg atgtggcgca aaagcacgcc gagcgctatc gccaggcgtt tgagatgttc 1080
 ctgcccgcaca aagacaaaat cagtcgtgtg acattttggg gtgtggacga cggcacttcg 1140
 tggctgaacg gtttcccggt gcgcggccgc accgattatc cgctgctatt tgatcgtcag 1200
 ggcaagccaa aaccgcctt tttcgcggtg caaaacgcgg cgatgggcgc aacagcgcaa 1260
 ccgagcgcca gcgctcccgc aacgcattgg gccgctcctg catccaccaa cattcgcgcc 1320
 gccgagtttc ctgcgctgga aagcgacggg cgggtgacgt ttcgcatcaa agcgcctgac 1380
 gcgcaaaaag tgcaatttga tttaggttaag ccttacgacg ccaccgcga cgccgagggc 1440
 aactggacgg cgaccacaga gccacaagtg cccggtctcc attattattt tttgattgtc 1500

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agcggcatcg	aaattcccg	tcccgacagc	gcgtttttat	cgccgcaaaa	cgtgccgcat	1620
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atggacaatc	tcatacgcg	gggcaaagcc	aaaccgatgc	tgggtggtgat	ggagcaaggc	1860
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gcgatgccgc	ccgacttta	tcgcatgttc	gccacgctgg	gcgaagtgtt	caccaaagac	1980
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gccggacttt	cgatgggtgg	aatgcaaagt	ttcatcatcg	gcctggcgaa	caccgatcta	2100
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cgcgatggca	ttccgcacgg	cgaaattaaa	cttgtggaat	acccttctgc	cacggtcggc	2580
accacgcgca	agatgcaggt	ctatacgccg	ccgggctaca	acccgcaaga	agaatatccc	2640
gtgctctatt	tgctgcacgg	catcggcggc	gacgagtggg	aatggaaaaa	tggcggcacg	2700
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ccggcggttg	cgacgtttga	gaaagatttg	ctgaacgaca	ttatcccctt	tggtgagaag	2880
aattaccccg	ccaaaaccgg	cccgcaaaat	cgcgcttttg	ccggtctttc	gatgggcggc	2940
gggcaatctc	tcaactttgg	cctcggcaac	ctcgacacct	tcgcgtgggt	tggcggcttt	3000
tcgtccgcgc	ccaacacgcg	cagcggcgca	agtctactgg	ccaatcccga	cgacgccaaa	3060
aagaagctga	agctgctgtg	ggtttcgtgc	ggcgataaag	acaatttgat	gtttatcagc	3120
cagcgcacgc	accgttatct	tgccgagaat	aacgtgccgc	acatctggca	tgtacagccc	3180
ggcggacacg	acttcaaggt	gtggaagcaa	gacctgtata	acttcgcccc	actgctattc	3240
cgttaa						3246

<210> 366
 <211> 1081
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<221> SIGNAL
 <222> (1)...(65)

<400> 366

Met	Asn	His	Phe	Ala	Ser	Lys	Ser	Leu	Arg	Met	Ala	Trp	Gln	Pro	Gly
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Leu	Leu	Ala	Thr	Thr	Val	Leu	Pro	Leu	Ala	Ala	Ala	Ala	Pro	Ile	Pro
		20						25					30		
Ala	Pro	Asn	Thr	Asp	Thr	Lys	Val	Ser	Asn	Thr	Ser	Ser	Ile	Thr	Thr
		35					40					45			
Pro	Ala	Ala	Ala	Pro	Gln	Ser	Gln	Pro	Gln	Pro	Thr	Gln	Asp	Ala	Asn
	50					55					60				
Ala	Pro	Ala	Pro	Leu	Lys	Ala	Ala	Phe	Arg	Asp	Lys	Phe	Leu	Ile	Gly
65					70				75				80		
Ala	Val	Leu	Ser	Asp	Ala	Ala	Leu	Arg	Gly	Ser	Ala	Pro	Asp	Lys	Val
			85					90					95		
Ala	Ile	Ala	Thr	Thr	His	Phe	Asn	Ala	Leu	Thr	Ala	Glu	Asn	Ala	Met
			100					105					110		
Lys	Pro	Asp	Ala	Met	Gln	Pro	Arg	Glu	Gly	Gln	Phe	Asn	Phe	Ala	Ala
		115					120					125			
Gly	Asp	Arg	Leu	Val	Glu	Leu	Ala	Glu	Lys	Ser	Gly	Gly	Val	Pro	Ile
		130				135					140				
Gly	His	Thr	Leu	Val	Trp	His	Ala	Gln	Thr	Pro	Lys	Trp	Phe	Phe	Glu
145					150				155						160
Gly	Pro	Asp	Gly	Gln	Pro	Ala	Thr	Arg	Glu	Leu	Ala	Leu	Glu	Arg	Met
			165					170					175		
Arg	Lys	His	Ile	Ser	Thr	Val	Val	Gly	Arg	Tyr	Lys	Gly	Arg	Ile	Lys
		180						185					190		
Glu	Trp	Asp	Val	Val	Asn	Glu	Ala	Ile	Asn	Asp	Gly	Pro	Gly	Val	Leu
		195					200					205			

Arg	Pro	Ser	Pro	Trp	Leu	Lys	Ala	Ile	Gly	Glu	Asp	Tyr	Ile	Ala	Glu
Ala	210	Phe	Arg	Ala	Ala	His	Ala	Ala	Asp	Pro	Asp	Ala	Ile	Leu	Ile
225						230					235				Tyr
Asn	Asp	Tyr	Asn	Ile	Glu	Leu	Gly	Tyr	Lys	Arg	Pro	Lys	Ala	Leu	Gln
				245					250					255	
Leu	Leu	Lys	Ser	Leu	Ile	Asp	Gln	Lys	Val	Pro	Ile	His	Ala	Val	Gly
			260					265					270		
Ile	Gln	Gly	His	Trp	Arg	Met	Asp	Asn	Pro	Asn	Phe	Ala	Glu	Val	Glu
		275					280					285			
Gln	Ala	Ile	Lys	Glu	Phe	Ser	Ala	Leu	Gly	Leu	Lys	Val	Met	Ile	Thr
	290					295					300				
Glu	Leu	Asp	Ile	Gly	Val	Leu	Pro	Thr	Arg	Tyr	Gln	Gly	Ala	Asp	Ile
305					310					315					320
Ser	Ala	Thr	Glu	Thr	Met	Thr	Pro	Glu	Gln	Arg	Ala	Val	Met	Asn	Pro
				325					330					335	
Tyr	Thr	Asp	Gly	Leu	Pro	Asp	Asp	Val	Ala	Gln	Lys	His	Ala	Glu	Arg
			340					345					350		
Tyr	Arg	Gln	Ala	Phe	Glu	Met	Phe	Leu	Arg	His	Lys	Asp	Lys	Ile	Ser
		355					360					365			
Arg	Val	Thr	Phe	Trp	Gly	Val	Asp	Asp	Gly	Thr	Ser	Trp	Leu	Asn	Gly
	370					375					380				
Phe	Pro	Val	Arg	Gly	Arg	Thr	Asp	Tyr	Pro	Leu	Phe	Asp	Arg	Gln	
385					390					395				400	
Gly	Lys	Pro	Lys	Pro	Ala	Phe	Phe	Ala	Val	Gln	Asn	Ala	Ala	Met	Gly
				405					410					415	
Ala	Thr	Ala	Gln	Pro	Ser	Ala	Ser	Ala	Pro	Ala	Thr	His	Gly	Ala	Ala
			420					425					430		
Pro	Ala	Ser	Thr	Asn	Ile	Arg	Gly	Ala	Glu	Phe	Pro	Arg	Val	Glu	Ser
		435					440					445			
Asp	Gly	Arg	Val	Thr	Phe	Arg	Ile	Lys	Ala	Pro	Asp	Ala	Gln	Lys	Val
	450					455					460				
Gln	Phe	Asp	Leu	Gly	Lys	Pro	Tyr	Asp	Ala	Thr	Arg	Asp	Ala	Glu	Gly
465					470					475					480
Asn	Trp	Thr	Ala	Thr	Thr	Glu	Pro	Gln	Val	Pro	Gly	Phe	His	Tyr	Tyr
				485					490					495	
Phe	Leu	Ile	Val	Asp	Gly	Val	Arg	Val	Ala	Asp	Pro	Ala	Ser	Glu	Thr
			500					505					510		
Phe	Tyr	Gly	Ala	Gly	Arg	Gln	Met	Ser	Gly	Ile	Glu	Ile	Pro	Asp	Pro
		515					520					525			
Asp	Ser	Ala	Phe	Tyr	Ser	Pro	Gln	Asn	Val	Pro	His	Gly	Glu	Val	Arg
	530					535					540				
Glu	Arg	Trp	Tyr	Phe	Ser	Asn	Thr	Thr	Gln	Ala	Trp	Arg	Arg	Ile	Phe
545					550					555					560
Ile	Tyr	Thr	Pro	Pro	Gly	Tyr	Asp	Thr	Asp	Gln	Ala	Met	Arg	Phe	Pro
				565					570					575	
Val	Leu	Tyr	Leu	Gln	His	Gly	Gly	Gly	Glu	Asp	Glu	Arg	Gly	Trp	Pro
			580					585					590		
Asn	Gln	Gly	Arg	Val	Ser	Phe	Ile	Met	Asp	Asn	Leu	Ile	Ala	Gln	Gly
		595					600					605			
Lys	Ala	Lys	Pro	Met	Leu	Val	Val	Met	Glu	Gln	Gly	Tyr	Ala	Arg	Lys
	610					615					620				
Pro	Asp	Glu	Pro	Gln	Val	Pro	Leu	Arg	Pro	Pro	Gly	Ser	Asn	Ala	Gly
625					630					635					640
Ala	Met	Pro	Pro	Asp	Phe	Asn	Arg	Met	Phe	Ala	Thr	Leu	Gly	Glu	Val
				645					650					655	
Phe	Thr	Lys	Asp	Leu	Ile	Pro	Phe	Ile	Asp	Ala	Asn	Tyr	Arg	Thr	Lys
			660					665					670		
Thr	Glu	Arg	Glu	Asn	Arg	Ala	Met	Ala	Gly	Leu	Ser	Met	Gly	Gly	Met
		675					680					685			
Gln	Ser	Phe	Ile	Ile	Gly	Leu	Ala	Asn	Thr	Asp	Leu	Phe	Ala	His	Leu
	690					695					700				
Gly	Gly	Phe	Ser	Gly	Ala	Gly	Gly	Gly	Phe	Gly	Gly	Gly	Ala	Phe	Asp
705					710					715					720
Ala	Lys	Thr	Ala	His	Gly	Gly	Val	Met	Ala	Asp	Ala	Asp	Ala	Phe	Asn
				725					730					735	
Lys	Lys	Val	Arg	Thr	Met	Phe	Leu	Ser	Ile	Gly	Thr	Ala	Glu	Asn	Glu
			740					745					750		
Arg	Phe	Gln	Ser	Ser	Val	Arg	Gly	Tyr	Arg	Asp	Ala	Leu	Thr	Lys	Ala

Gly	Ile	Lys	Thr	Thr	Phe	Tyr	Glu	Ser	Pro	Gly	Thr	Ser	His	Glu	Trp
770	770	770	770	770	770	775	760	760	760	765	780	780	780	780	780
Leu	Thr	Trp	Arg	Arg	Ser	Leu	Arg	Glu	Phe	Ala	Pro	Leu	Leu	Phe	Gln
785	785	785	785	785	790	790	790	790	795	795	795	795	795	795	800
Glu	Ala	Asn	Thr	Gln	Ile	Glu	Arg	Gly	Pro	Asn	Ala	Arg	Pro	Ile	Ala
				805					810					815	
Pro	Gln	Pro	Ile	Val	Leu	Gly	Pro	Gly	Asp	Lys	Pro	Ala	Phe	Pro	Pro
			820					825					830		
Ala	Pro	Ser	Gly	Phe	Asp	Ala	Arg	Arg	Asp	Gly	Ile	Pro	His	Gly	Glu
		835					840					845			
Ile	Lys	Leu	Val	Glu	Tyr	Pro	Ser	Ala	Thr	Val	Gly	Thr	Thr	Arg	Lys
	850					855					860				
Met	Gln	Val	Tyr	Thr	Pro	Pro	Gly	Tyr	Asn	Pro	Gln	Glu	Glu	Tyr	Pro
865					870				875						880
Val	Leu	Tyr	Leu	Leu	His	Gly	Ile	Gly	Gly	Asp	Glu	Trp	Glu	Trp	Lys
			885						890					895	
Asn	Gly	Gly	Thr	Pro	Glu	Val	Ile	Leu	Asp	Asn	Leu	Tyr	Ala	Glu	Lys
			900					905					910		
Lys	Leu	Gln	Pro	Met	Ile	Val	Val	Met	Pro	Asn	Gly	Arg	Ala	Gln	Lys
		915					920					925			
Asp	Asp	Arg	Pro	Ile	Gly	Asn	Val	Phe	Ala	Ser	Ala	Pro	Ala	Phe	Ala
	930					935					940				
Thr	Phe	Glu	Lys	Asp	Leu	Leu	Asn	Asp	Ile	Ile	Pro	Phe	Val	Glu	Lys
945					950				955						960
Asn	Tyr	Pro	Thr	Lys	Thr	Gly	Pro	Gln	Asn	Arg	Ala	Leu	Ala	Gly	Leu
				965					970					975	
Ser	Met	Gly	Gly	Gly	Gln	Ser	Leu	Asn	Phe	Gly	Leu	Gly	Asn	Leu	Asp
			980					985					990		
Thr	Phe	Ala	Trp	Val	Gly	Gly	Phe	Ser	Ser	Ala	Pro	Asn	Thr	Arg	Ser
		995					1000					1005			
Gly	Ala	Ser	Leu	Leu	Ala	Asn	Pro	Asp	Asp	Ala	Lys	Lys	Lys	Leu	Lys
	1010					1015					1020				
Leu	Leu	Trp	Val	Ser	Cys	Gly	Asp	Lys	Asp	Asn	Leu	Met	Phe	Ile	Ser
1025					1030					1035					1040
Gln	Arg	Thr	His	Arg	Tyr	Leu	Ala	Glu	Asn	Asn	Val	Pro	His	Ile	Trp
				1045					1050					1055	
His	Val	Gln	Pro	Gly	Gly	His	Asp	Phe	Lys	Val	Trp	Lys	Gln	Asp	Leu
			1060					1065					1070		
Tyr	Asn	Phe	Ala	Gln	Leu	Leu	Phe	Arg							
		1075					1080								

<210> 367
 <211> 1338
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<400> 367	atgaaaagaa	ttggattact	atttatggcg	ttggcgctaa	ccgcatttat	ggcgcagcat	60
	tcgtccgctc	aaaggatttg	caataaccaa	acagggaccc	atgggtggatt	ctactacaca	120
	tggtggagtg	atgggggttg	atctgcattg	ataacaatgg	gcgatggcgg	taactacagc	180
	acccaatgga	gcaataaccg	taactttgta	ggcggtaagg	gttggagcac	aggaagatcc	240
	aaccgcgtaa	ttagttacaa	tgctggtaac	tggtcgccat	cgggtaatgc	ttacctatgt	300
	ttatatggct	ggactaccaa	cccgcttggt	gagtactacg	tagttgatag	ctgggggttct	360
	tgagagacct	ccggagcaac	atcgcaggga	acagtaaata	ctgatggtgg	cacctatgag	420
	atatacagaa	ctcagcgtgt	aaaccagcca	tctattcagg	ggaatactac	tttctatcag	480
	tattggagcg	ttagaacctc	taaaagggcc	actggaagca	atgctaccat	caccttccag	540
	aaccacgtaa	atgcttgggc	aagtaggggt	tggaacttgg	gagctcatag	ctatcaggta	600
	ctggctaccg	agggttatca	gagcagcgga	agttcaaata	ttactgtttg	ggaaggtggt	660
	tcaagtggag	gttcttcagg	tggaagcacc	ggaggcagca	ctggaggtgg	atcacacgag	720
	atcattgtaa	gagcccgtgg	tgtagtaggt	tcagagcaaa	ttaggcttag	ggttggcaat	780
	acaaccgttg	caacttggac	ccttactacc	ggttataggg	actatagggc	tactacctca	840
	gctactggtg	gtattcttgt	agagtacttc	aatgatagcg	gcaaccgtga	tggttcagatt	900
	gattacattg	gggtaaacgg	ctcaactctg	caatctgaga	acatgtcgta	caatacaggg	960
	gtatggcaga	atggctcatg	cggcggctcc	aatagcgagt	ggctacactg	caacggagct	1020
	attggctacg	gcgatgtggt	tactggcaga	tcaaccgctg	ttgaggaagc	atttactgct	1080

gccgaggatt	gtggctgtga	acctaaggca	accctattcc	ccaaccctgc	tggcagtacc	1140
ctcagtatta	tgctagacag	gcaaccctat	ggcgatgtaa	gtattagaat	atataatacg	1200
gtaggtgcag	ttgttcgcac	catcaacaat	ccagacctac	tcactgaggt	tgatgtcagt	1260
gcattaaatt	ctggaatcta	ctttgtagag	cttaggtccg	aaggacatgt	aagcaactac	1320
aaatttatta	aaaagtag					1338

<210> 368

<211> 445

<212> PRT

<213> Unknown

<220>

<223> obtained from an environmental sample.

<221> SIGNAL

<222> (1)...(23)

<400> 368

Met	Lys	Arg	Ile	Gly	Leu	Leu	Phe	Met	Ala	Leu	Ala	Leu	Thr	Ala	Phe
1				5					10					15	
Met	Ala	Gln	His	Ser	Ser	Ala	Gln	Arg	Ile	Cys	Asn	Asn	Gln	Thr	Gly
			20					25					30		
Thr	His	Gly	Gly	Phe	Tyr	Tyr	Thr	Trp	Trp	Ser	Asp	Gly	Gly	Gly	Ser
		35					40					45			
Ala	Cys	Ile	Thr	Met	Gly	Asp	Gly	Gly	Asn	Tyr	Ser	Thr	Gln	Trp	Ser
	50					55					60				
Asn	Thr	Gly	Asn	Phe	Val	Gly	Gly	Lys	Gly	Trp	Ser	Thr	Gly	Arg	Ser
65					70				75					80	
Asn	Arg	Val	Ile	Ser	Tyr	Asn	Ala	Gly	Asn	Trp	Ser	Pro	Ser	Gly	Asn
			85					90					95		
Ala	Tyr	Leu	Cys	Leu	Tyr	Gly	Trp	Thr	Asn	Pro	Leu	Val	Glu	Tyr	
			100					105				110			
Tyr	Val	Val	Asp	Ser	Trp	Gly	Ser	Trp	Arg	Pro	Pro	Gly	Ala	Thr	Ser
		115					120					125			
Gln	Gly	Thr	Val	Asn	Thr	Asp	Gly	Gly	Thr	Tyr	Glu	Ile	Tyr	Arg	Thr
	130					135					140				
Gln	Arg	Val	Asn	Gln	Pro	Ser	Ile	Gln	Gly	Asn	Thr	Thr	Phe	Tyr	Gln
145					150				155					160	
Tyr	Trp	Ser	Val	Arg	Thr	Ser	Lys	Arg	Ala	Thr	Gly	Ser	Asn	Ala	Thr
			165					170					175		
Ile	Thr	Phe	Gln	Asn	His	Val	Asn	Ala	Trp	Ala	Ser	Arg	Gly	Trp	Asn
			180					185					190		
Leu	Gly	Ala	His	Ser	Tyr	Gln	Val	Leu	Ala	Thr	Glu	Gly	Tyr	Gln	Ser
		195					200					205			
Ser	Gly	Ser	Ser	Asn	Ile	Thr	Val	Trp	Glu	Gly	Gly	Ser	Ser	Gly	Gly
	210					215					220				
Ser	Ser	Gly	Gly	Ser	Thr	Gly	Gly	Ser	Thr	Gly	Gly	Gly	Ser	His	Glu
225					230				235					240	
Ile	Ile	Val	Arg	Ala	Arg	Gly	Val	Val	Gly	Ser	Glu	Gln	Ile	Arg	Leu
			245						250				255		
Arg	Val	Gly	Asn	Thr	Thr	Val	Ala	Thr	Trp	Thr	Leu	Thr	Thr	Gly	Tyr
			260					265					270		
Arg	Asp	Tyr	Arg	Ala	Thr	Thr	Ser	Ala	Thr	Gly	Gly	Ile	Leu	Val	Glu
	275						280					285			
Tyr	Phe	Asn	Asp	Ser	Gly	Asn	Arg	Asp	Val	Gln	Ile	Asp	Tyr	Ile	Arg
	290					295					300				
Val	Asn	Gly	Ser	Thr	Arg	Gln	Ser	Glu	Asn	Met	Ser	Tyr	Asn	Thr	Gly
305					310					315				320	
Val	Trp	Gln	Asn	Gly	Ser	Cys	Gly	Gly	Ser	Asn	Ser	Glu	Trp	Leu	His
			325						330				335		
Cys	Asn	Gly	Ala	Ile	Gly	Tyr	Gly	Asp	Val	Val	Thr	Gly	Arg	Ser	Thr
			340					345					350		
Ala	Val	Glu	Glu	Ala	Phe	Thr	Ala	Ala	Glu	Asp	Cys	Gly	Cys	Glu	Pro
		355					360					365			
Lys	Ala	Thr	Leu	Phe	Pro	Asn	Pro	Ala	Gly	Ser	Thr	Leu	Ser	Ile	Met
	370					375					380				
Leu	Asp	Arg	Gln	Pro	Tyr	Gly	Asp	Val	Ser	Ile	Arg	Ile	Tyr	Asn	Thr
385					390					395				400	
Val	Gly	Ala	Val	Val	Arg	Thr	Ile	Asn	Asn	Pro	Asp	Leu	Leu	Thr	Glu

Val Asp Val Ser Ala Leu Asn Ser Gly Ile Tyr Phe Val Glu Leu Arg
 405 410 415
 420 425 430
 Ser Glu Gly His Val Ser Asn Tyr Lys Phe Ile Lys Lys
 435 440 445

<210> 369
 <211> 1077
 <212> DNA
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<400> 369
 atgaaatcat ttatcactgg caaaaaaatt gctgctggac taattactgc agctgctttg 60
 agcgcatcta tggtagcggc gcaaaccctg acttcaaatt ctcaaggcac ccacgacgga 120
 tttttctact ctttctggaa ggactcaggc aacgcctcaa tgaacttatt ggcgggcggc 180
 cgttatcagt ctagctggaa caccggcacc aacaactggg taggcggtaa aggcctggaac 240
 ccaggcacta acaaccgtgt aattaactac tctggttact acggtgtgga caactcccaa 300
 aactcttacg tcgcgcttta cggctggacc agaaacccat tggttgagta ctacgtgatt 360
 gagagctacg gctcatataa ccctgctagc tgctctggcg gcaccgattt cggtagcttc 420
 caaagtgcg cgccaccta caacgtgcgt cgttgccagc gcgtgcaaca gccttcgatc 480
 gatggcacc agactttcta ccaatacttc agcgtgagaa atccgaaaaa aggggtttggg 540
 aacatttctg gcaccatcac ctttgctaac cacgtaaact actggagaag cagagggatg 600
 aatcttggtg accacgatta ccaagtcttc gctactgaag gctacagaag cacgggttct 660
 tctgacctca ccactagcca aggcgcaagc aacaacggcg gtggcggcag tagctcaagt 720
 gctccatctg ctggggggcg tagcaagaca atcgtcgtgc gggcacgcgg gactaccgga 780
 caagagcaaa tccgtttgcg ggtgaacaac actattgttc agacctggac cttgtccacc 840
 accatgcgcg actacaccgt caacactaac ttggcaggcg ggatcattggt tgaatacttc 900
 aatgacagcg gcaaccgcga cgtccaagtt gattacatca gcgtaaatgg caatgttcgc 960
 caatccgaaa accaaaccta caacaccggt gtctaccaga acggtgcgtg tggcggcggg 1020
 aacggccgga gcgagtggct ccattgcaac ggtgcaatcg ggtacggcga tatctaa 1077

<210> 370
 <211> 358
 <212> PRT
 <213> Unknown

<220>
 <223> obtained from an environmental sample.

<221> SIGNAL
 <222> (1)...(27)

<400> 370
 Met Lys Ser Phe Ile Thr Gly Lys Lys Ile Ala Ala Gly Leu Ile Thr
 1 5 10 15
 Ala Ala Ala Leu Ser Ala Ser Met Val Ser Ala Gln Thr Leu Thr Ser
 20 25 30
 Asn Ser Gln Gly Thr His Asp Gly Phe Phe Tyr Ser Phe Trp Lys Asp
 35 40 45
 Ser Gly Asn Ala Ser Met Asn Leu Leu Ala Gly Gly Arg Tyr Gln Ser
 50 55 60
 Ser Trp Asn Thr Gly Thr Asn Asn Trp Val Gly Gly Lys Gly Trp Asn
 65 70 75 80
 Pro Gly Thr Asn Asn Arg Val Ile Asn Tyr Ser Gly Tyr Tyr Gly Val
 85 90 95
 Asp Asn Ser Gln Asn Ser Tyr Val Ala Leu Tyr Gly Trp Thr Arg Asn
 100 105 110
 Pro Leu Val Glu Tyr Tyr Val Ile Glu Ser Tyr Gly Ser Tyr Asn Pro
 115 120 125
 Ala Ser Cys Ser Gly Gly Thr Asp Phe Gly Ser Phe Gln Ser Asp Gly
 130 135 140
 Ala Thr Tyr Asn Val Arg Arg Cys Gln Arg Val Gln Gln Pro Ser Ile
 145 150 155 160
 Asp Gly Thr Gln Thr Phe Tyr Gln Tyr Phe Ser Val Arg Asn Pro Lys
 165 170 175
 Lys Gly Phe Gly Asn Ile Ser Gly Thr Ile Thr Phe Ala Asn His Val

180 185 190
 Asn Tyr Trp Arg Ser Arg Gly Met Asn Leu Gly Asn His Asp Tyr Gln
 195 200 205
 Val Leu Ala Thr Glu Gly Tyr Arg Ser Thr Gly Ser Ser Asp Leu Thr
 210 215 220
 Ile Ser Gln Gly Ala Ser Asn Asn Gly Gly Gly Ser Ser Ser Ser
 225 230 235 240
 Ala Pro Ser Ala Gly Gly Ser Lys Thr Ile Val Val Arg Ala Arg
 245 250 255
 Gly Thr Thr Gly Gln Glu Gln Ile Arg Leu Arg Val Asn Asn Thr Ile
 260 265 270
 Val Gln Thr Trp Thr Leu Ser Thr Thr Met Arg Asp Tyr Thr Val Asn
 275 280 285
 Thr Asn Leu Ala Gly Gly Ser Leu Val Glu Tyr Phe Asn Asp Ser Gly
 290 295 300
 Asn Arg Asp Val Gln Val Asp Tyr Ile Ser Val Asn Gly Asn Val Arg
 305 310 315 320
 Gln Ser Glu Asn Gln Thr Tyr Asn Thr Gly Val Tyr Gln Asn Gly Ala
 325 330 335
 Cys Gly Gly Gly Asn Gly Arg Ser Glu Trp Leu His Cys Asn Gly Ala
 340 345 350
 Ile Gly Tyr Gly Asp Ile
 355

<210> 371

<211> 1245

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 371

gtgaccggga	tgcgcagaaa	aggcgtatgg	tccgtgattt	ccggaacttt	cactgccggg	60
gattacgatt	cctacctgct	gtatgtcgaa	acacaggacc	agggcgggcg	acacccgacg	120
ctgagctttg	aaatccggaa	cttcagactg	acggcaccgg	aaggcatcgc	tccgccgaag	180
gcgacagaag	aaccggctga	cgcggcagag	gcgacgcctg	ttccggcact	gagcgagatt	240
ccgggcctga	aggacgtcta	cgcgactac	tttgacttcg	gcgctgcggc	gccgcagtat	300
gcattcggcc	tcggccagac	ccagctgcag	gacctgatga	tcagccagtt	cagcatcctg	360
acccctgaaa	acgaactgaa	accggacagc	gtgcttgatg	tccagacgag	taaaaaactg	420
gcggcagaag	acgaaaccgc	ggtggcgatc	aggctgaacg	ccgcaacgcc	gctgctgaag	480
ttcgcgcaga	agaacggcat	caaagtgcac	ggccatgtgc	tggtatggca	cagccagacg	540
ccggaagctt	tcttccatga	aggatacgat	accaagaaac	cctatgtgac	gagagagggt	600
atgctcggcc	gcctggaaaa	ctatatccgt	gaagtgtgta	cgacagacaga	ggaacagttc	660
ccgggcgtga	tcgtcagctg	ggacgtcgtg	aacgaggcga	tcgacgacgg	tactcactgg	720
ctgcgggaag	cttcacagctg	gtacaaagtc	gtcggcgagg	atttcctgaa	cagggctttt	780
gaatacgcca	ggaaatacgc	cgcgaggggc	gtgctgctgt	actacaacga	ttacagcacg	840
gcaaattcgg	ctaaactgat	gggcatcacg	aagctgctga	agcagctgat	tccagacggg	900
aatatcgacg	gctacggatt	ccagatgcac	catgacctcg	gctggccgag	catcgacctt	960
atggcggcag	ctgtgaagca	gattgccggc	ctggggcggt	aactgcgcgt	cagcgaactg	1020
gatatcggcg	tatccaagaa	caatcaggaa	aactatgaca	aacaggccaa	acgctacaag	1080
gaaatgctga	acctgatgct	gcagtacgcg	gaccagacgg	aagccgtgca	ggctctggggc	1140
ctgacggaca	acatgagctg	gagaaccggc	aaataccgcg	tgctgttcga	cagcgcggca	1200
aaaccgaaaa	aggcgttctt	cgcggtgatt	gaagccgcag	aggaa		1245

<210> 372

<211> 415

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 372

Met Thr Gly Ile Ala Arg Lys Gly Val Trp Ser Val Ile Ser Gly Thr
 1 5 10 15
 Phe Thr Ala Gly Asp Tyr Asp Ser Tyr Leu Leu Tyr Val Glu Thr Gln
 20 25 30
 Asp Gln Gly Gly Gly His Pro Thr Leu Ser Phe Glu Ile Arg Asn Phe

Arg	Leu	Thr	Ala	Pro	Glu	Gly	Ile	Ala	Pro	Pro	Lys	Ala	Thr	Glu	Glu
50						55					60				
Pro	Ala	Asp	Ala	Ala	Glu	Ala	Thr	Pro	Val	Pro	Ala	Leu	Ser	Glu	Ile
65					70					75					80
Pro	Gly	Leu	Lys	Asp	Val	Tyr	Ala	Asp	Tyr	Phe	Asp	Phe	Gly	Ala	Ala
				85					90					95	
Ala	Pro	Gln	Tyr	Ala	Phe	Gly	Leu	Gly	Gln	Thr	Gln	Leu	Gln	Asp	Leu
			100					105					110		
Met	Ile	Ser	Gln	Phe	Ser	Ile	Leu	Thr	Pro	Glu	Asn	Glu	Leu	Lys	Pro
		115					120					125			
Asp	Ser	Val	Leu	Asp	Val	Gln	Thr	Ser	Lys	Lys	Leu	Ala	Ala	Glu	Asp
	130					135					140				
Glu	Thr	Ala	Val	Ala	Ile	Arg	Leu	Asn	Ala	Ala	Thr	Pro	Leu	Leu	Lys
145					150					155					160
Phe	Ala	Gln	Lys	Asn	Gly	Ile	Lys	Val	His	Gly	His	Val	Leu	Val	Trp
				165					170					175	
His	Ser	Gln	Thr	Pro	Glu	Ala	Phe	Phe	His	Glu	Gly	Tyr	Asp	Thr	Lys
		180						185					190		
Lys	Pro	Tyr	Val	Thr	Arg	Glu	Val	Met	Leu	Gly	Arg	Leu	Glu	Asn	Tyr
	195						200					205			
Ile	Arg	Glu	Val	Leu	Thr	Gln	Thr	Glu	Glu	Gln	Phe	Pro	Gly	Val	Ile
	210					215					220				
Val	Ser	Trp	Asp	Val	Val	Asn	Glu	Ala	Ile	Asp	Asp	Gly	Thr	His	Trp
225					230					235					240
Leu	Arg	Lys	Thr	Ser	Ser	Trp	Tyr	Lys	Val	Val	Gly	Glu	Asp	Phe	Leu
				245					250					255	
Asn	Arg	Ala	Phe	Glu	Tyr	Ala	Arg	Lys	Tyr	Ala	Ala	Glu	Gly	Val	Leu
		260						265					270		
Leu	Tyr	Tyr	Asn	Asp	Tyr	Ser	Thr	Ala	Asn	Ser	Ala	Lys	Leu	Met	Gly
	275					280						285			
Ile	Thr	Lys	Leu	Leu	Lys	Gln	Leu	Ile	Pro	Asp	Gly	Asn	Ile	Asp	Gly
	290					295					300				
Tyr	Gly	Phe	Gln	Met	His	His	Asp	Leu	Gly	Trp	Pro	Ser	Ile	Asp	Leu
305					310					315					320
Met	Ala	Ala	Ala	Val	Lys	Gln	Ile	Ala	Gly	Leu	Gly	Leu	Lys	Leu	Arg
				325					330					335	
Val	Ser	Glu	Leu	Asp	Ile	Gly	Val	Ser	Lys	Asn	Asn	Gln	Glu	Asn	Tyr
			340					345				350			
Asp	Lys	Gln	Ala	Lys	Arg	Tyr	Lys	Glu	Met	Leu	Asn	Leu	Met	Leu	Gln
	355						360					365			
Tyr	Ala	Asp	Gln	Thr	Glu	Ala	Val	Gln	Val	Trp	Gly	Leu	Thr	Asp	Asn
	370					375					380				
Met	Ser	Trp	Arg	Thr	Gly	Lys	Tyr	Pro	Leu	Leu	Phe	Asp	Ser	Ala	Ala
385					390					395					400
Lys	Pro	Lys	Lys	Ala	Phe	Phe	Ala	Val	Ile	Glu	Ala	Ala	Glu	Glu	
				405					410					415	

<210> 373

<211> 1539

<212> DNA

<213> Unknown

<220>

<223> obtained from an environmental sample.

<400> 373

ttgattggct	gcgtcatgtc	gccgccggaa	gcgggaagtc	cccgttttga	tcttttaacc	60
cggcacttta	atgtcatcac	cgcggaaaac	gccatgaagc	ccgcgtcgtt	gcagcgcgaa	120
aagggggtgt	ttacttttga	acaggcggac	atgatggttg	acgcggtatt	ggagcgggga	180
ctgaagatcc	acggacatac	tctggccttg	caccagcagt	ctccggagtg	gatgaatcat	240
gaggggattt	cccgggacga	agccgtggaa	aatctcaccg	tccacgcca	aaccgcggcc	300
gtcatittta	gggggcgggt	catatccttg	gatgtactca	acgaggcgat	cattgacaat	360
cccccaacc	ccggggattg	gcgggcattc	ctcaggcaaa	gcccctggta	caaagccata	420
ggcccggatt	acgtggagct	tgtgttcaag	gcggccaggg	aggcggaccc	ggaggcaaaa	480
ctttattata	acgattacaa	ccttgataac	cggaacaagg	ccctggcggt	ttacaacatg	540
gtcaggggaa	tgaacgaaaa	gaatccgaat	ccgggcggca	ggcccctcat	cgacggcggtg	600
ggcatgcagg	gccattaccg	cctgaatacc	aataccgata	acgtgaggct	gtcgtctggaa	660
cggtttattt	ccctgggggt	cgagggtcagc	atcacggagc	tcgatataca	ggccggttcg	720

gattcaaac	agacagagcg	gcagcgggtg	gaacagggcc	tggtctatgc	cgctttgttt	780
accattttcc	gggaacacgc	ggcaaacata	ggccgggtaa	ctttttgggg	acttgacgac	840
ggggcaagct	ggcgtttccgc	ggcgagtccc	tgcctctttg	ataaaaaacct	caacgcaaaa	900
cctgcctttt	acgcggtcct	ggacccggat	tcctttattg	cggaataacag	cgccctgctg	960
atcaggggaag	cgaaagaggg	agaggcttat	tatggtagcg	ctgcttttagg	cgccgtccct	1020
gatccccctct	gggacagggc	gccttccctc	ccggtggatc	agtacctcat	ggcctggcag	1080
ggcgcttcgg	gaagggcaaa	agtcctctgg	gacgaaaaaa	atctctatgt	gctgggtccgg	1140
gttgaaaacg	cggaataaaa	caaggacagt	tccaacagct	acgaacagga	ttcgggtcgaa	1200
attttttattg	atgaggataa	ccggaaaagt	tcctttttca	gggaggatga	cgggcagtag	1260
cggggtcaatt	ttgccaacga	ggcgggcttt	aaccctctcg	ccgccggggc	ggggttttgtt	1320
tcggccgccc	cggtggatgg	aaaatcctat	accgttacca	tgaagattcc	ctttaaaaca	1380
atagtccccg	gagcggggac	gcgtatcggg	tttgatgtcc	agatcaacgg	cgcgtcggcc	1440
aggggggatac	gggagagcgt	ggcgggtatg	aatgatacca	cgggcaattc	atttcaggat	1500
acctcaggtt	acgggggtact	gcgggttagta	aaaaagtaa			1539

<210> 374

<211> 512

<212> PRT

<213> Unknown

<220>

<223> obtained from an environmental sample.

<400> 374

Met	Ile	Gly	Cys	Val	Met	Ser	Pro	Pro	Glu	Ala	Gly	Ser	Pro	Arg	Phe
1				5					10					15	
Asp	Leu	Leu	Thr	Arg	His	Phe	Asn	Val	Ile	Thr	Ala	Glu	Asn	Ala	Met
			20					25					30		
Lys	Pro	Ala	Ser	Leu	Gln	Arg	Glu	Lys	Gly	Val	Phe	Thr	Phe	Glu	Gln
		35					40					45			
Ala	Asp	Met	Met	Val	Asp	Ala	Val	Leu	Glu	Arg	Gly	Leu	Lys	Ile	His
	50					55					60				
Gly	His	Thr	Leu	Ala	Trp	His	Gln	Gln	Ser	Pro	Glu	Trp	Met	Asn	His
65					70				75					80	
Glu	Gly	Ile	Ser	Arg	Asp	Glu	Ala	Val	Glu	Asn	Leu	Thr	Val	His	Ala
			85						90					95	
Lys	Thr	Ala	Ala	Ala	His	Phe	Arg	Gly	Arg	Val	Ile	Ser	Trp	Asp	Val
			100					105					110		
Leu	Asn	Glu	Ala	Ile	Ile	Asp	Asn	Pro	Pro	Asn	Pro	Gly	Asp	Trp	Arg
		115					120					125			
Ala	Ser	Leu	Arg	Gln	Ser	Pro	Trp	Tyr	Lys	Ala	Ile	Gly	Pro	Asp	Tyr
		130				135					140				
Val	Glu	Leu	Val	Phe	Lys	Ala	Ala	Arg	Glu	Ala	Asp	Pro	Glu	Ala	Lys
145					150				155						160
Leu	Tyr	Tyr	Asn	Asp	Tyr	Asn	Leu	Asp	Asn	Arg	Asn	Lys	Ala	Leu	Ala
			165						170					175	
Val	Tyr	Asn	Met	Val	Arg	Glu	Leu	Asn	Glu	Lys	Asn	Pro	Asn	Pro	Gly
			180					185					190		
Gly	Arg	Pro	Leu	Ile	Asp	Gly	Val	Gly	Met	Gln	Gly	His	Tyr	Arg	Leu
		195					200					205			
Asn	Thr	Asn	Thr	Asp	Asn	Val	Arg	Leu	Ser	Leu	Glu	Arg	Phe	Ile	Ser
		210				215					220				
Leu	Gly	Val	Glu	Val	Ser	Ile	Thr	Glu	Leu	Asp	Ile	Gln	Ala	Gly	Ser
225					230					235					240
Asp	Ser	Asn	Gln	Thr	Glu	Arg	Gln	Arg	Val	Glu	Gln	Gly	Leu	Val	Tyr
			245						250					255	
Ala	Ala	Leu	Phe	Thr	Ile	Phe	Arg	Glu	His	Ala	Ala	Asn	Ile	Gly	Arg
			260					265					270		
Val	Thr	Phe	Trp	Gly	Leu	Asp	Asp	Gly	Ala	Ser	Trp	Arg	Ser	Ala	Ala
		275					280					285			
Ser	Pro	Cys	Leu	Phe	Asp	Lys	Asn	Leu	Asn	Ala	Lys	Pro	Ala	Phe	Tyr
		290				295					300				
Ala	Val	Leu	Asp	Pro	Asp	Ser	Phe	Ile	Ala	Glu	Asn	Ser	Ala	Leu	Leu
305					310					315					320
Ile	Arg	Glu	Ala	Lys	Glu	Gly	Glu	Ala	Tyr	Tyr	Gly	Thr	Pro	Ala	Leu
			325						330					335	
Gly	Ala	Val	Pro	Asp	Pro	Leu	Trp	Asp	Arg	Ala	Pro	Ser	Leu	Pro	Val
			340					345					350		
Asp	Gln	Tyr	Leu	Met	Ala	Trp	Gln	Gly	Ala	Ser	Gly	Arg	Ala	Lys	Val

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      355      360      365
Leu Trp Asp Glu Lys Asn Leu Tyr Val Leu Val Arg Val Glu Asn Ala
 370 375 380
Glu Ile Asn Lys Asp Ser Ser Asn Ser Tyr Glu Gln Asp Ser Val Glu
385 390 395 400
Ile Phe Ile Asp Glu Asp Asn Arg Lys Ser Ser Phe Phe Arg Glu Asp
 405 410 415
Asp Gly Gln Tyr Arg Val Asn Phe Ala Asn Glu Ala Gly Phe Asn Pro
 420 425 430
Ser Ser Ala Gly Ala Gly Phe Val Ser Ala Ala Ala Val Asp Gly Lys
 435 440 445
Ser Tyr Thr Val Thr Met Lys Ile Pro Phe Lys Thr Ile Val Pro Gly
 450 455 460
Ala Gly Thr Arg Ile Gly Phe Asp Val Gln Ile Asn Gly Ala Ser Ala
465 470 475 480
Arg Gly Ile Arg Glu Ser Val Ala Val Trp Asn Asp Thr Thr Gly Asn
 485 490 495
Ser Phe Gln Asp Thr Ser Gly Tyr Gly Val Leu Arg Leu Val Lys Lys
 500 505 510

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<210> 375

<211> 570

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetically generated polynucleotide

<400> 375

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atggccctta tggcttcgac attctactgg cacttggtgga ctgatggtat agggacagta      60
aatgctacca atggatctga tggcaattac agcgtttcat ggtcaaattg cgggaatttt      120
gttggttgga aaggctggac taccggatca gcaactaggg taataaacta taatgcccac      180
gccttttcgg tagtgggtaa tgcttatttg gctctttatg ggtggacgag aaattcactc      240
atagaatatt acgtcgttga tagctggggg acttatagac ctactggaac ttataaaggc      300
actgtgacta gtgatggagg gacttatgac atatacacga ctacacgaac caacgcacct      360
tccattgacg gcaataatac aactttcacc cagttctgga gtgttaggca gtcgaagaga      420
ccgattggta ccaacaatac catcaccttt agcaaccatg ttaacgcctg gaagagtaaa      480
ggaatgaatt tggggagtag ttggctctat caggtattag caacagaggg ctatcaaagt      540
agtgggtact ctaacgtaac ggtctggtaa

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<210> 376

<211> 189

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetically generated polypeptide

<400> 376

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Met Ala Leu Met Ala Ser Thr Phe Tyr Trp His Leu Trp Thr Asp Gly
 1 5 10 15
Ile Gly Thr Val Asn Ala Thr Asn Gly Ser Asp Gly Asn Tyr Ser Val
 20 25 30
Ser Trp Ser Asn Cys Gly Asn Phe Val Val Gly Lys Gly Trp Thr Thr
 35 40 45
Gly Ser Ala Thr Arg Val Ile Asn Tyr Asn Ala His Ala Phe Ser Val
 50 55 60
Val Gly Asn Ala Tyr Leu Ala Leu Tyr Gly Trp Thr Arg Asn Ser Leu
65 70 75 80
Ile Glu Tyr Tyr Val Val Asp Ser Trp Gly Thr Tyr Arg Pro Thr Gly
 85 90 95
Thr Tyr Lys Gly Thr Val Thr Ser Asp Gly Gly Thr Tyr Asp Ile Tyr
100 105 110
Thr Thr Thr Arg Thr Asn Ala Pro Ser Ile Asp Gly Asn Asn Thr Thr
115 120 125
Phe Thr Gln Phe Trp Ser Val Arg Gln Ser Lys Arg Pro Ile Gly Thr
130 135 140
Asn Asn Thr Ile Thr Phe Ser Asn His Val Asn Ala Trp Lys Ser Lys
145 150 155 160

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Gly Met Asn Leu Gly Ser Ser Trp Ser Tyr Gln Val Leu Ala Thr Glu
 165 170 175
 Gly Tyr Gln Ser Ser Gly Tyr Ser Asn Val Thr Val Trp
 180 185

<210> 377
 <211> 570
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetically generated polynucleotide

<400> 377
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 aatgctacca atggatctga tggcaattac agcgtttcat ggtcaaattg cgggaatttt 120
 gttgttggtta aaggctggac taccggatca gcaactaggg taataaacta taatgccac 180
 gccctttcgg tagtgggtaa tgcttatttg gctctttatg ggtggacgag aaatccactc 240
 atagaatatt acgtcgttga tagctggggg acttatagac ctactggaac ttataaaggc 300
 actgtgacta gtgatggagg gacttatgac atatacacga ctacacgaac caacgcacct 360
 tccattgacg gcaataatac aactttcacc cagttctgga gtgttaggca gtcgaagaga 420
 ccgattggta ccaacaatac catcaccttt agcaaccatg ttaacgcctg gaagagtaaa 480
 ggaatgaatt tggggagtag ttgggtcttat caggtattag caacagaggg ctatcaaagt 540
 agtgggtact ctaacgtaac ggtctggtta 570

<210> 378
 <211> 189
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetically generated polypeptide

<400> 378
 Met Ala Leu Met Ala Ser Thr Phe Tyr Trp His Leu Trp Thr Asp Gly
 1 5 10 15
 Ile Gly Thr Val Asn Ala Thr Asn Gly Ser Asp Gly Asn Tyr Ser Val
 20 25 30
 Ser Trp Ser Asn Cys Gly Asn Phe Val Val Gly Lys Gly Trp Thr Thr
 35 40 45
 Gly Ser Ala Thr Arg Val Ile Asn Tyr Asn Ala His Ala Phe Ser Val
 50 55 60
 Val Gly Asn Ala Tyr Leu Ala Leu Tyr Gly Trp Thr Arg Asn Pro Leu
 65 70 75 80
 Ile Glu Tyr Tyr Val Asp Ser Trp Gly Thr Tyr Arg Pro Thr Gly
 85 90 95
 Thr Tyr Lys Gly Thr Val Thr Ser Asp Gly Gly Thr Tyr Asp Ile Tyr
 100 105 110
 Thr Thr Thr Arg Thr Asn Ala Pro Ser Ile Asp Gly Asn Asn Thr Thr
 115 120 125
 Phe Thr Gln Phe Trp Ser Val Arg Gln Ser Lys Arg Pro Ile Gly Thr
 130 135 140
 Asn Asn Thr Ile Thr Phe Ser Asn His Val Asn Ala Trp Lys Ser Lys
 145 150 155 160
 Gly Met Asn Leu Gly Ser Ser Trp Ser Tyr Gln Val Leu Ala Thr Glu
 165 170 175
 Gly Tyr Gln Ser Ser Gly Tyr Ser Asn Val Thr Val Trp
 180 185

<210> 379
 <211> 570
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetically generated polynucleotide.

<400> 379
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aatgctacca	atggatctga	tggaattac	agcgtttcat	ggtcaaattg	cggaatttt	120
gttggttgta	aaggctggac	taccggatca	gcaactaggg	taataaacta	taatgcccac	180
gccitttcgc	cggtgggtaa	tgcttatttg	gctctttatg	ggtggacgag	aaattcactc	240
atagaatatt	acgtcgttga	tagctggggg	acttatagac	ctactggaac	ttataaaggc	300
actgtgacta	gtgatggagg	gacttatgac	atatacacga	ctacacgaac	caacgcacct	360
tccattgacg	gcaataatac	aactttcacc	cagttctgga	gtgttaggca	gtcgaagaga	420
ccgattggta	ccaacaatac	catcaccttt	agcaaccatg	ttaacgcctg	gaagagtaaa	480
ggaatgaatt	tggggagtag	ttggtcttat	caggtattag	caacagaggg	ctatcaaagt	540
agtgggtact	ctaacgtaac	ggtctggtaa				570

<210> 380

<211> 189

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetically generated polypeptide.

<400> 380

Met	Ala	Leu	Met	Ala	Ser	Thr	Phe	Tyr	Trp	His	Asn	Trp	Thr	Asp	Gly
1				5					10					15	
Ile	Gly	Thr	Val	Asn	Ala	Thr	Asn	Gly	Ser	Asp	Gly	Asn	Tyr	Ser	Val
			20					25					30		
Ser	Trp	Ser	Asn	Cys	Gly	Asn	Phe	Val	Val	Gly	Lys	Gly	Trp	Thr	Thr
		35					40					45			
Gly	Ser	Ala	Thr	Arg	Val	Ile	Asn	Tyr	Asn	Ala	His	Ala	Phe	Ser	Pro
	50				55						60				
Val	Gly	Asn	Ala	Tyr	Leu	Ala	Leu	Tyr	Gly	Trp	Thr	Arg	Asn	Ser	Leu
65					70				75						80
Ile	Glu	Tyr	Tyr	Val	Val	Asp	Ser	Trp	Gly	Thr	Tyr	Arg	Pro	Thr	Gly
			85						90					95	
Thr	Tyr	Lys	Gly	Thr	Val	Thr	Ser	Asp	Gly	Gly	Thr	Tyr	Asp	Ile	Tyr
			100					105					110		
Thr	Thr	Thr	Arg	Thr	Asn	Ala	Pro	Ser	Ile	Asp	Gly	Asn	Asn	Thr	Thr
		115					120					125			
Phe	Thr	Gln	Phe	Trp	Ser	Val	Arg	Gln	Ser	Lys	Arg	Pro	Ile	Gly	Thr
		130				135					140				
Asn	Asn	Thr	Ile	Thr	Phe	Ser	Asn	His	Val	Asn	Ala	Trp	Lys	Ser	Lys
145					150					155					160
Gly	Met	Asn	Leu	Gly	Ser	Ser	Trp	Ser	Tyr	Gln	Val	Leu	Ala	Thr	Glu
				165					170					175	
Gly	Tyr	Gln	Ser	Ser	Gly	Tyr	Ser	Asn	Val	Thr	Val	Trp			
			180					185							

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